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1047
No. 2835

United States
Circuit Court of Appeals

For the Ninth Circuit

VINEYARD LAND & STOCK COMPANY, a Corporation, Appellant,

VS.

TWIN FALLS SALMON RIVER LAND AND WATER COMPANY, a Corporation, and SALMON RIVER CANAL COMPANY, Limited, a Corporation, Appellee.

Transcript of the Record

Filed

NOV 29 1916

F. D. Monckton,
Clerk.

*Upon Appeal from the United States District Court
for the District of Idaho, Southern Division.*

No.

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*In the District Court of the United States, for the
District of Idaho, Southern Division.*

TWIN FALLS SALMON RIVER LAND AND
WATER COMPANY, a Corporation, and SAL-
MON RIVER CANAL COMPANY, LIMITED,
a Corporation, Plaintiffs,

vs.

VINEYARD LAND AND STOCK COMPANY, a
Corporation, Defendant.

BILL IN EQUITY.

*To the Honorable, The Judge of the District Court
of the United States, for the District of
Idaho, Southern Division:*

The Twin Falls Salmon River Land and Water Company, a corporation, organized and existing under the laws of the State of Delaware, and a citizen of the said State of Delaware, and the Salmon River Canal Company, Limited, a corporation, organized and existing under the laws of the State of Idaho, and a citizen of said State of Idaho, bring this their Bill against the Vineyard Land and Stock Company, a corporation organized under the laws of the State of Utah and a citizen of said State of Utah, and thereupon your orators complain and say:

1.

That the Twin Falls Salmon River Land and Water Company is a corporation organized and at

all the times hereinafter mentioned was existing under the laws of the State of Delaware and a citizen of said State, and duly authorized and empowered to do business in the State of Idaho having complied with the laws thereof relative to foreign corporations.

That the Salmon River Canal Company, Limited, is a corporation organized and at all of the times hereinafter mentioned was existing under the laws of the State of Idaho and a citizen of said State.

2.

That the defendant, the Vineyard Land and Stock Company, is a corporation organized and at all of the times hereinafter mentioned was existing under the laws of the State of Utah, and at all of the times hereinafter mentioned and at the present time, a citizen of said State.

3.

That on or about the 12th day of August, 1907, I. B. Perrine, together with other persons, made an application to the State Board of Land Commissioners of the State of Idaho, under the provisions of Section 1615 of the Revised Codes of the State of Idaho, wherein and whereby said I. B. Perrine and his associates proposed to construct certain irrigation works in Twin Falls County, State of Idaho, for the purpose of irrigating approximately 127,000 acres of land, situated in Townships 11, 12, 13, and 14 South and Ranges 14, 15, 16 and 17 East of the Boise Meridian, in said Twin Falls County, State of Idaho,

said lands being arid in character and requiring irrigation in order to produce an agricultural crop;

That for the purpose of irrigating said land, said I. B. Perrine and his associates proposed to divert the waters of Salmon River in said Twin Falls County to the extent of 1500 cubic feet per second of time and said I. B. Perrine and his associates requested said State Board of Land Commissioners to procure the segregation of the lands hereinbefore mentioned and also to procure a contract to be entered into between the United States of America and the State of Idaho under the terms of what is commonly called the Carey Act wherein and whereby the said United States of America should promise and agree to convey to said State of Idaho the said lands hereinabove described when said State should have procured the building of the necessary works for the irrigation of said lands;

That said proposal and request was received and after a report by the State Engineer of the State of Idaho, was accepted by said State Board of Land Commissioners of said State of Idaho; that application was thereafter made for the segregation of said lands and on the 10th day of April, 1908, the United States of America entered into a contract with the State of Idaho wherein and whereby said United States of America promised and agreed to convey to said State of Idaho the aforesaid lands upon the State of Idaho securing the construction of the necessary irrigation works for the irrigation of said lands.

4.

That the Twin Falls Salmon River Land and Water Company, a corporation, one of the plaintiffs herein, was organized among other things, for the purpose of constructing irrigation works in the State of Idaho under contract with said State; that said I. B. Perrine and his associates, with the consent of the State Board of Land Commissioners of the State of Idaho, after making the proposal and request hereinbefore mentioned, conveyed to the plaintiff, the Twin Falls Salmon River Land and Water Company, a corporation, all of their rights and interests acquired under and by virtue of said proposal and request.

5.

That thereafter and on the 30th day of April, 1908, said Twin Falls Salmon River Land and Water Company, the plaintiff herein, made and entered into a contract with the State of Idaho, under the terms of what is commonly known as the Carey Act and the legislation of the State of Idaho supplemental thereto wherein and whereby said Twin Falls Salmon River Land and Water Company contracted and agreed with the said State of Idaho to build and construct certain irrigation works in Twin Falls County, State of Idaho, consisting of a dam, tunnels, canals and conduits for the irrigation of the lands hereinbefore mentioned, a copy of which contract omitting the description of the lands to be irrigated is filed herewith, hereby referred to, made a part hereof and marked Exhibit "A"; that it was provided by the

terms of said contract that a certain dam, tunnels and canals should be constructed as specified in said contract for the purpose of diverting 1500 cubic feet per second of the waters of Salmon River in said Twin Falls County, State of Idaho, for the irrigation of said lands;

That plaintiff herein, the Twin Falls Salmon River Land and Water Company, has completed the construction of the aforesaid dam, tunnels and canals as required and provided in said contract with the State of Idaho, dated April 30th, 1908, and marked Exhibit "A" herein, and that it is necessary to divert from said Salmon River at the point specified in said contract, to-wit, Section 18, Township 14 South, Range 15 East, Boise Meridian, in Twin Falls County, State of Idaho, the said amount of 1500 cubic feet per second of the waters of said Salmon River for the irrigation of the lands hereinbefore mentioned; that it was provided in said contract that a reservoir with a capacity of approximately 180,000 acre feet should be provided by the construction of a certain dam mentioned in said contract, Exhibit "A"; that said dam has been constructed and said reservoir provided.

That the highest flow in high water of said Salmon River is less than 1500 cubic feet per second of time and that it is necessary to gather and use the entire flow of said Salmon River for the purpose of irrigating the aforesaid lands and procuring the necessary flow therefor.

6.

That on the 29th day of December, 1906, the predecessors in interest of said Twin Falls Salmon River Land and Water Company made application to the State Engineer of the State of Idaho, said application being numbered 3495, for authority and permission to divert 1500 second feet of the waters of said Salmon River in said Twin Falls County, State of Idaho, for the purpose of irrigation and domestic use upon the lands hereinbefore mentioned; that thereafter the State Engineer of the State of Idaho issued to the said predecessors in interest of the said Twin Falls Salmon River Land and Water Company upon the aforesaid application, Permit No. 2659, authorizing and permitting the predecessors in interest of the said Twin Falls Salmon River Land and Water Company to divert from said Salmon River in said Twin Falls County at the point hereinabove mentioned 1500 second feet of the waters of said stream for the purpose of irrigating the said lands hereinbefore mentioned; that prior to the commencement of any construction work under said permit, the permit and all rights acquired thereunder and thereby were conveyed to the Twin Falls Salmon River Land and Water Company;

That said company thereafter commenced and completed the construction of the irrigation works provided for and set forth in said permit, said works being so located that the aforesaid lands might be irrigated therefrom and having sufficient capacity therefor; that the said works so constructed are the

same works as the works specified in the said contract with the State of Idaho, Exhibit "A." The said irrigation works being completed, the State Engineer of the State of Idaho did on the 14th day of May, 1912, issue to the said Twin Falls Salmon River Land and Water Company, the holder of said Permit No. 2659 for the diversion of 1500 second feet of the waters of Salmon River in said Twin Falls County, State of Idaho, a certificate of completion of works as provided by the laws of the State of Idaho.

That said Twin Falls Salmon River Land and Water Company having complied with the terms of said application and permit, are now authorized and empowered and are entitled to the use of 1500 cubic feet per second of the waters of said Salmon River to be diverted at the point aforesaid and that their right to divert said waters dates from the said 29th day of December, 1906, said plaintiff and its successors in interest having priority to the use of said waters over all other persons appropriating the same since said date; that it requires the entire flow of Salmon River at said point of diversion to supply the right of the plaintiff herein.

7.

That said Salmon River is formed by various small streams and creeks joining together in the County of Elko, and State of Nevada, and running thence northward through a portion of said county into and through the County of Twin Falls and State of Idaho, and thence emptying into the Snake River in said

State; that a portion of the streams forming said Salmon River lie in Twin Falls County, State of Idaho, and flow southward and westerly into Elko County, State of Nevada, and empty into said Salmon River.

8.

That under the terms of the said contract, Exhibit "A", between the State of Idaho and the said Twin Falls Salmon River Land and Water Company, one of the plaintiffs herein, it was provided and required that the said Twin Falls Salmon River Land and Water Company should construct the irrigation works therein provided for and should thereafter organize a certain company to be called the Salmon River Canal Company, Limited, which company should after the completion of the works, own, operate and conduct the same and all water rights acquired under and by virtue of said Permit No. 2659, as more particularly set forth in paragraph IX of said contract; that after the making of said contract, Exhibit "A", and of the contract between the United States of America and the State of Idaho, providing for the transfer to said State of the lands hereinbefore described, approximately 80,000 acres of said land were thrown open for settlement by said State of Idaho in pursuance of the provisions of the laws of said State relating thereto and upwards of five hundred persons made entries of land upon said tract of land hereinbefore described in pursuance of the laws of said State and purchased shares of stock in the said Salmon River Canal Company, Limited, as provided by said contract, Exhibit "A"; that

said persons are desirous of using the waters of said stream for the irrigation of their lands and under the provisions of the laws of the State of Idaho relative thereto, they are required to irrigate and reclaim said lands by means of said irrigation system in order to acquire title to said lands.

That the United States of America will not make conveyance of the lands hereinbefore mentioned to the State of Idaho until said irrigation works are constructed and a supply of water sufficient for the reclamation of said lands is provided through said irrigation system.

9.

That the Salmon River Canal Company, Limited, the plaintiff herein, is the Salmon River Canal Company, Limited, sometimes called the Salmon River Canal Company mentioned in said agreement, Exhibit "A", and is the company whose shares of stock represent the water rights of the settlers upon the lands before mentioned and is the company for whose use and benefit the said irrigation works were constructed, all of which fully appears by reference to said contract, Exhibit "A", and is the company for whose use and benefit said water permit was acquired, and that the plaintiffs herein according to their respective interests, are the owners and holders of said irrigation works and said water permit No. 2659, and are now entitled to divert from said Salmon River at the point of diversion aforesaid, 1500 cubic feet per second of time of the waters of said stream, being the entire flow thereof at the point of

diversion hereinbefore mentioned; that all of the waters of said Salmon River are required for the irrigation of the lands hereinbefore mentioned which said lands are under and may be irrigated from the irrigation system of the plaintiffs herein.

10.

That the defendant herein is the owner of lands in Elko County, State of Nevada, and in Twin Falls County, State of Idaho; that said corporation has designated Twin Falls County, State of Idaho, as its principal place of business in the State of Idaho, and has appointed an agent therein upon whom the service of process may be made and has filed the designation of such agency with the Secretary of State of the State of Idaho, and with the County Recorder of said Twin Falls County.

11.

That the said defendant, the Vineyard Land and Stock Company, has commenced and is now constructing canals and ditches in the County of Elko and State of Nevada, for the purpose of appropriating, diverting and using the waters of said Salmon River and its tributaries in said Elko County and preventing the same from flowing down said stream into the State of Idaho and preventing the use of said waters by the plaintiffs herein and by the stockholders of said Salmon River Canal Company, Limited; that the said defendant threatens to and will unless prevented by the order, decree and judgment of this court, divert and use the waters of said stream be-

fore the same reaches the irrigation works of the plaintiff herein and will prevent the use of said waters by said plaintiffs and the stockholders of said Salmon River Canal Company, Limited, to the extent and in the manner in which they are entitled to use the same as hereinbefore set forth; that plaintiff is unable to ascertain the exact nature or extent of the claim made by the defendant herein to the waters of said Salmon River but that all of the rights of the defendant thereto are subsequent and subject to the rights of the plaintiffs herein and of the stockholders of the said Salmon River Canal Company, Limited.

12.

That plaintiffs herein are now in the use and enjoyment of said waters of said Salmon River and are using the entire flow of said stream for the irrigation of the lands hereinabove mentioned.

That notwithstanding the priority of the rights of the plaintiffs herein, the said defendant sets up and claims some rights to the use of the said waters of Salmon River prior and superior to the rights of the plaintiffs and of the said stockholders of said Salmon River Canal Company, Limited.

WHEREFORE, Your orators pray that the said defendant be required to fully set forth the nature of its demands and claims to the use of the waters of said Salmon River; that the right, title and interest of the plaintiffs herein, in and to the use of the waters of said Salmon River, be adjudged and decreed to be prior and superior to the rights of the defendant herein, and that the plaintiffs' right and

title to the use of said waters be quieted and determined; that the defendant, its agents, servants and successors in interest be forever enjoined and restrained from diverting or using the waters of said Salmon River and that a preliminary restraining order may issue herein and that a temporary injunction may issue pending the final determination of this suit, restraining and enjoining the said defendant from diverting or using the waters of said stream and that your orators may have all other further and proper relief.

May it please your Honor therefore to grant unto your orators the writ of subpoena to be issued from the Clerk's office of this court, directed to the said defendant and commanding it to appear herein upon a day to be named therein and full and true answer make to this Bill, but not under oath (an answer under oath being waived), and your orators will forever pray.

TWIN FALLS SALMON RIVER LAND AND
WATER COMPANY, a Corporation,
SALMON RIVER CANAL COMPANY, LIMITED,
a Corporation,

By S. H. HAYS,
Their Solicitor, residing at Boise, Idaho.

State of Idaho, County of Ada, ss.

S. H. HAYS, being first duly sworn deposes and says that he is the attorney and solicitor of the plaintiffs in the above entitled Bill; that he has read the foregoing Bill and knows the contents thereof and

that the same is true of his own knowledge except as to those matters therein stated to be upon information or belief and that as to those matters he believes it to be true.

That none of the officers of either of the plaintiffs herein are now within the County of Ada, and, therefore, this verification is made by said attorney.

S. H. HAYS.

Subscribed and sworn to before me this 20th day of May, 1912. A. L. Richardson, Clerk. By E. B. Yarrington, Deputy. (Seal).

Endorsed: Filed May 20th, 1912. A. L. Richardson, Clerk. By E. B. Yarrington, Deputy.

SUBSTANCE OF EXHIBIT "A".

Agreement Between the State of Idaho and Twin Falls Salmon River Land and Water Company.

THIS AGREEMENT, Made and entered into in duplicate this 30th day of April, 1908, by and between the State of Idaho, the party of the first part, through the State Board of Land Commissioners of said State, said Board consisting of Frank R. Gooding, Governor, Robert Lansdon, Secretary of State, John J. Guheen, Attorney General, and S. Belle Chamberlain, Superintendent of Public Instruction of said State, and the Twin Falls Salmon River Land and Water Company, a corporation organized and existing under the laws of the State of Delaware and duly authorized to do business in the State of Idaho (having complied with the laws thereof relative to

foreign corporations) the party of the second part, WITNESSETH, That,

WHEREAS, the party of the second part has succeeded to all the rights of C. B. Hurtt, George F. Sprague, I. B. Perrine and H. L. Hollister for the irrigation of lands in Twin Falls County, State of Idaho, which rights are evidenced by the Proposal and Request heretofore made by them on the 12th day of August, 1907, which Proposal and Request were approved by the State Board of Land Commissioners of the State of Idaho on the 12th day of August, 1907, and

WHEREAS, all of the property, rights and franchises of the said C. B. Hurtt, George F. Sprague, I. B. Perrine and H. L. Hollister acquired under and by virtue of the said accepted Proposal and Request have by the consent of the State Board of Land Commissioners been duly transferred to the party of the second part herein.

IT IS MUTUALLY AGREED AND COVENANTED as follows:

Purpose of the Contract.

I. That for and in consideration of the covenants of the said party of the first part herein contained, the party of the second part agrees to construct and build those certain irrigation works mentioned and described in the aforesaid Proposal and Request dated on the 12th day of August, 1907, and hereinafter more particularly described and to sell shares or water rights in said canal and irrigation system from time to time as hereinafter provided to the

person or persons filing upon the lands hereinafter described and also to the owners of other lands not described herein but which are susceptible of irrigation from this canal system or from any extension or enlargement thereof; said shares or water rights to be sold on the terms hereinafter provided and also to transfer the ownership, management and control of said canal system to the purchasers of shares or water rights as hereinafter provided.

General Specifications for Construction:

Reservoir.

II. The reservoir is to be formed by a masonry dam two hundred and ten feet in height, five hundred and fifty feet long on top, founded upon a solid rock foundation and extending from wall to wall of the lava canyon on Salmon River in Section 18, Township 14 South of Range 15 East, Boise Meridian, in Twin Falls County, State of Idaho.

The reservoir formed by the dam will have a surface area of over three thousand acres, an available capacity of 180,000 acre feet and will extend southward from the dam a distance of approximately twelve miles.

Dam.

The dam will be constructed of rock solidly imbedded in concrete. Its top width to be fifteen feet, its bottom width (210 feet below crest) will be one hundred and nineteen feet; it will be built upon an arch of two hundred and twenty-five feet radius and with a height and length as above specified.

Tunnels.

The water will be diverted from the reservoir through a tunnel ten feet by ten feet in section equipped with suitable metal gates in concrete settings.

The first tunnel will be approximately 2500 feet long followed by an open cut approximately 800 feet long which cut will be followed by a second tunnel of the same length and cross section as the first. The tunnels are to be concrete lined where necessary and to be built upon a grade of one in one thousand.

Canal.

' Beyond the end of the second tunnel described above, the water shall be conveyed in open channels to the land to be reclaimed, using in part artificial channels and in part natural channels of suitable section grade and character of material. Both natural and artificial channels shall have a capacity of one-hundredth of one second feet of water for each acre of land served by them.

The main canal above the first point of distribution shall have a capacity of one thousand second feet, which is likewise the capacity of the tunnel section.

The grades and cross sections of the canal may vary to suit the local conditions and natural channels or coulees shall be utilized when suitable.

In earth sections, the main canal shall have a bottom width of thirty-two feet, a water depth of eight feet, the sides shall have slopes of three to one and the grade of the canal shall be one in five thousand.

Outlets from the main canal shall be built of con-

crete or other equally durable material with gates of wood or steel.

The canal system is to be surveyed and laterals are to be hereafter located, all entries of land being made subject to such location.

Changes in these plans and specifications may be made by second party with the consent of the State Engineer and the State Board of Land Commissioners.

Detailed plans will be hereafter filed with the State Engineer and with the State Land Board and when so approved shall become final.

Right of Way.

III. (Provides for rights of way over lands belonging to the State of Idaho or lands that may be ceded to the State by Act of Congress commonly known as the Carey Act; also that the number and location of laterals and waste ditches shall be determined by the Chief Engineer of the company, subject to the approval of the State Engineer; also that detailed maps showing location of canals, laterals, reservoir and waste ditches shall be filed with the Board and with the State Engineer; also that no compensation shall be paid to land owners for rights of way herein provided for.)

Appropriation of Water.

IV. The party of the second part is the owner of that certain water right evidenced by Permit No. 2659 for 1500 cubic feet per second of the waters of Salmon River in Twin Falls County, State of Idaho,

issued by the State Engineer of the State of Idaho, to be used for the irrigation of the lands described in Exhibit "A" herewith, together with other lands susceptible of irrigation from said system, which water right is hereby dedicated for use upon said lands and it is agreed and understood that the dam hereinbefore mentioned shall be constructed so as to provide a reservoir for the impounding of 180,000 acre feet of water, which amount, in addition to the normal flow of the said stream during the irrigation period, has been determined to be sufficient to furnish two and three-fourths acre feet of water per acre for each acre of land to be irrigated.

And the second party promises and agrees to build and construct the canal and lateral system of sufficient capacity to deliver water to the users thereof at the rate of one-hundredth of a second foot per acre for each acre of land to be irrigated.

Entry of Lands.

V. Upon the execution of this contract and when the actual construction of said canal shall have been inaugurated the said party of the first part will, after notice given in conformity with law, throw open the hereinafter described lands or a specified portion thereof for settlement under such regulations as to the manner of said opening as shall be prescribed by the State Board of Land Commissioners.

Application for Lands.

VI. The said party of the first part through its State Board of Land Commissioners agrees that it

will not approve any application for or filing on the lands hereinafter described until the person or persons so applying shall furnish to the said Board a true copy of the contract entered into with the party of the second part for the purchase of sufficient shares or water rights in said irrigation works for the irrigation of said lands; said shares or water rights to be evidenced by the stock of the Salmon River Canal Company, Limited, as hereinafter provided and the said second party stipulates and agrees that to the extent of the capacity of the irrigation works and to the extent of the water rights to which it is entitled as rapidly as lands are open for entry and settlement, it will sell or contract to sell water rights or shares for land to be filed upon the qualified entrymen or purchasers without preference or partiality other than that based upon priority of application, it being understood, however, that priority of application or priority of entry or settlement shall not give any priority of right to the use of water flowing through the canal against subsequent purchasers but shall entitle the purchaser to a proportionate interest only therein, the water rights having been taken for the benefit of the entire tract of land to be irrigated from the system. The priority of application upon the opening days shall be determined by a system to be devised under the direction of the State Board of Land Commissioners.

Sale of Land by the State.

VII. That the said party of the first part, acting through its State Board of Land Commissioners,

agrees to sell the lands herein described to such persons as are or may be by law entitled to file upon the same for the sum of fifty cents (\$.50) per acre, half of which sum shall be paid at the time of application for the entry of such lands made to said Board and the remaining one-half at the time of making of final proof thereon.

Price of Water Rights.

VIII. (Provides that second party is to sell settlers one share, representing one-hundredth of a second foot of water for each acre at forty dollars (\$40) per share, to be paid, one-fifth in cash on date of agreement, and remainder in five equal annual installments, with interest at six per cent. per annum; also for additional charge of two dollars forty cents (\$2.40) for each share for each year's delay, or fraction thereof, in the purchase of water rights after one year from the date lands are thrown open for settlement; also provides that this agreement shall not be construed to prevent the sale of water rights on terms more favorable than those herein provided for, or to prevent the payment of installments on the purchase price in advance of maturity, at option of purchaser.)

Transfer of Possession and Management of Canal.

IX. It being necessary to provide a convenient method of transferring the ownership and control of said canal from the said party of the second part herein to the purchasers of water rights in said canal and for determining their rights among themselves and between said purchasers and the party of the

second part herein; for the purpose of operating and maintaining said canal during the period of construction and afterwards for the purpose of levying and collecting toll charges and assessments for the carrying on and maintenance of said canal and the operation and management thereof, it is hereby provided that as soon as said lands are ordered thrown open for settlement a corporation to be known as the Salmon River Canal Company, Limited, shall be formed at the expense of the party of the second part, the articles of incorporation of said company to be in substantially the form which is filed herewith and made a part hereof; that the authorized capital stock of said corporation shall be one hundred and fifty thousand shares (150,000) which amount is intended to represent one share for each acre of land which may be hereafter irrigated from said canal. The entire authorized amount of the capital stock of said corporation shall be delivered to the party of the second part herein in consideration of the covenants and agreements herein contained in order to enable it to deliver to purchasers of water rights the shares of stock representing the same; said shares of stock, however, shall have no voting power and shall not have force and effect until they have been sold or contracted to be sold to the purchasers of land under this irrigation system. At the time of the purchase of any water right, or as soon thereafter as convenient, there shall be issued to the purchaser thereof one share of the capital stock of said corporation for each acre of land entered or filed upon; that the said

party of the second part therein shall in case said water rights or shares of stock are not fully paid for require the endorsement and delivery to it of said stock and shall at the same time require of said purchaser an agreement that until thirty-five per cent. of the purchase price of said stock has been paid, the said party of the second part therein shall vote said stock in such manner as it may deem proper at all meetings of the stockholders of said corporation and the said Salmon River Canal Company shall have the management, ownership and control, as above set out, of the said canal system as fast as the same is completed and turned over by it for operation by the said party of the second part, as hereinafter provided. Whenever it is certified by the Chief Engineer of the company and the State Engineer that certain portions of the said canal are completed for the purpose of operation, the same may, with the consent of the State Land Board be turned over to the Salmon River Canal Company, Limited, for operation. Such transfer and operation, however, shall not in any manner lessen the responsibility of the said second party with reference to the terms of the contract, nor shall such consent upon the part of the State Land Board be construed as a final acceptance of such portion of such canal, it being always understood that the acceptance of such canal must be in its entirety and that the bond given for the faithful performance of the said contract must be made and be liable for the substantial completion of the entire canal system.

Water Rights Dedicated.

X. (Provides that certificates of shares of stock of Salmon River Canal Company, Limited, shall be made to indicate and define the interests thereby represented in said system as provided in paragraphs 4 and 8 of this agreement; also provides for method of delivering water to the irrigators during the time the party of the second part retains control of the Salmon River Canal Company, Limited; also provides that the sale of water rights to purchasers shall be a dedication of the water to the lands to which the same are to be applied, and that the irrigation season includes the period from April 1st to November 1st of each year; that a domestic supply outside of irrigation season shall be delivered under such regulations and terms as shall be determined by the said Salmon River Canal Company, Limited.)

Management of Water and Charges for Delivery.

XI. (Provides that water must be made available at a point not to exceed one-half mile measured in a direct line from each quarter section of land; that each settler shall under the direction of the Chief Engineer of the second party build and furnish one gate and measuring device for his own use, but all other gates, weirs and measuring devices in the main canals or main or subordinate laterals shall be furnished by the second party; that no charge shall be made to purchaser for delivery of water prior to the 1st day of January, 1911, but thereafter for each succeeding year while second party retains control it may charge and assess purchasers of water rights

thirty-five cents per acre, which sum is to be paid on the 1st day of March of each year; that if the sum so raised shall be insufficient prior to January 1st, 1913, for purposes of maintenance, operation and repair and for paying expenses of management, second party will furnish funds to supply such deficiency; after said date actual costs of maintenance are to be paid by the settlers; defines terms "main lateral" and "subordinate lateral," and that coulees or draws used as a main lateral shall be included within these terms.")

Completion of System.

XII. Said party of the second part agrees to begin work on said irrigation system within six months from the date of this contract and to complete 1-5 of the construction work within two years from this date; that the construction work shall be prosecuted diligently and continuously to completion and that a cessation of work under this contract for a period of six months after the second year without the sanction of the State Board of Land Commissioners will forfeit to the State all rights under this contract.

Second party agrees to have said canal system constructed in accordance with this contract within five years from the date hereof; it being understood, however, that detailed plans and specifications of said work have not yet been completed and that such detailed plans and specifications are to be approved by the State Engineer and that with his consent and the consent of the State Land Board alterations and changes may be made in the plans prepared and filed.

Forfeiture.

XIII. It is agreed that the rights of second party herein may be forfeited in accordance with the laws of the State of Idaho relative to that subject which are now in force and effect.

Estimated Cost.

XIV. The estimated cost of the proposed irrigation works is \$2,500,000 and upwards and the price at which water rights are fixed herein and for which liens are hereby authorized and created against the separate legal sub-divisions of land herein described are deemed necessary in order to pay the costs and expenses of reclamation and interest thereon. The existing laws under which this contract is made are understood and agreed to be a part of this contract.

Description of Lands.

XV. The lands hereinbefore referred to are lands donated by the Act of Congress to the State of Idaho, under and pursuant to the Act of Congress approved August 18th, 1894, and the Amendments relating thereto, commonly called the Carey Act, and also other lands hereinafter described, the irrigation and reclamation of which lands this contract is designed to effect. The lands to be reclaimed under said "Carey Act" are fully set forth in the list herewith marked Exhibit "A" which is hereby referred to and made a part hereof.

Highways.

XVI. (Provides that land entries are made subject to rights of way for roads.)

Water Supply for Cities and Towns.

XVII. (Provides for water supply for cities and towns under certain conditions.)

Delivery of Water to Users.

XVIII. (Provides that water shall not be delivered to persons who have not purchased water rights.)

Mortgage.

XIX. (Provides that system may be mortgaged.)

Amendments.

XX. (Provides how contract may be amended; that detailed plans and specifications shall be filed from time to time as the work progresses; that with the consent of the State Land Board the irrigation system may be enlarged to cover lands not under the system as at present designed.)

Coulees and Draws.

XXI. (Provides that coulees and draws may be used as waterways when made to conform to artificially constructed laterals.)

Whereas, All the requirements of the law have been, in so far as this contract is concerned, fully met and in every respect complied with; the execution of this contract is therefore ordered.

In Witness Whereof, the said party of the first part, the State of Idaho, has by resolution of its State Board of Land Commissioners caused this agreement to be signed in duplicate by its governor, who is ex-officio president of said State Board of Land Commissioners, and attested by the registrar of said Board.

And the said party of the second part has heretofore caused its corporate name to be subscribed by its proper officer and to be duly attested, as provided by resolution of this Board of Directors.

STATE BOARD OF LAND COMMISSIONERS,
By F. N. Gooding,
Governor and ex-officio President.

Attest: M. I. Church,
Registrar.

TWIN FALLS SALMON RIVER LAND AND
WATER CO., By W. S. Kuhn, President.

Attest: A. E. DeBois,
Assistant Secretary.

Endorsed: Filed May 20, 1912.

A. L. Richardson, Clerk.

By E. B. Yarrington.

(Title of Court and Cause.)

AMENDMENT TO BILL.

Come now the plaintiffs herein and ask leave of the Court to amend the bill herein by adding thereto paragraph thirteen, said paragraph thirteen to read as follows:

13.

That the value of the matter in controversy herein exceeds the sum of three thousand (\$3,000.00) dollars, exclusive of interest and costs;

That defendant herein threatens to and will unless restrained by the order of this Court divert from said Salmon River and its tributaries, of the waters belonging to plaintiff, more than sufficient thereof to

irrigate one thousand acres of land, which water is of the value of forty thousand (\$40,000) dollars;

That if said waters are permanently withheld from plaintiffs as defendant threatens to do, a large number of the persons who have heretofore entered lands thrown open for settlement by the state will be without a water supply and the United States of America will under the terms of its contract with the State of Idaho made under and pursuant to the Act of Congress commonly known as the Carey Act, refuse to issue to said State a patent for said lands.

S. H. HAYS,

Solicitor for Complainants.

Endorsed: Filed Sept. 13, 1913.

A. L. Richardson, Clerk.

In Equity No. 405.

(Title of Court and Cause.)

AMENDED ANSWER AND COUNTERCLAIM.

Comes now the defendant in the above and foregoing action, and for answer to the allegations and demands of relief on behalf of the plaintiffs, admits, denies and alleges, and for further Amended Answer and Counterclaim, setting forth its claims in the premises, says:

1.

Answering paragraph 1 of the Complaint, admits the allegations thereof.

2.

Answering paragraph 2 of the Complaint, admits the allegations thereof.

3.

Answering paragraph 3 of the complaint, and particularly the first sub-paragraph thereof, this defendant is without knowledge particularly of the allegation therein that on the 12th day of August, 1907, I. B. Perrine, together with other persons, made application to the State Board of Land Commissioners of Idaho, as therein alleged, or that they proposed to construct certain irrigation works in Twin Falls County, Idaho, as therein set forth, for the purpose of irrigating the acreage of land as therein set forth; and this defendant is without knowledge as to said lands being arid in character and to require irrigation to produce crops thereon.

As to the remaining allegations of said paragraph this defendant is without knowledge as to the truth thereof.

4.

Answering paragraph 4, this defendant is without knowledge as to each and every of the allegations therein set forth.

5.

Answering paragraph 5, and particularly the first sub-paragraph thereof, defendant admits the execution of the contract therein set forth, and the purposes thereof, as alleged.

Answering the second sub-paragraph thereof, this defendant is without knowledge as to whether the plaintiff has completed the construction of said dams, channels or canals as required by said contract, as

alleged, and further denies that it is necessary to divert from said Salmon River at the point of diversion therein alleged, the amount of 1500 cu. ft. per second of the waters of said river for irrigation purposes, as alleged; and is without knowledge that said dam has been constructed, and said reservoir provided, as therein alleged, or otherwise than as herein-after more fully set forth.

Denies that the highest flow of water of said Salmon River is 1500 cubic feet per second, and further denies that it is necessary to gather and use the entire flow of said river, as alleged, for the purpose of irrigating the lands in said Complaint set forth.

6.

Answering paragraph 6, the defendant admits the making of the application numbered 3495, but is without knowledge as to whether same was made by the predecessor in interest of the plaintiff Twin Falls Salmon River Land & Water Company; admits that the State Engineer of the State of Idaho, issued the alleged permit numbered 2659, but is without knowledge that said parties to whom issued were the predecessors in interest of the Twin Falls Salmon River Land & Water Company, or that it was for the purpose of irrigating the lands mentioned in said complaint; is without knowledge as to the allegation therein that prior to the commencement of any construction work under said permit, said permit and all rights acquired thereunder and thereby were conveyed to said Twin Falls Salmon River Land & Water Company, as alleged.

Is without knowledge as to whether said company completed or has completed the construction of the irrigation works alleged and set forth in said permit, or that said works are so erected that said lands may be irrigated therefrom, or that they or any works have sufficient capacity therefor; is without knowledge that said works are the same works specified in the contract set forth, or that they have been constructed in accordance therewith.

Admits that the State Engineer of the State of Idaho issued to said Twin Falls Salmon River Land & Water Company a certificate of completion, as alleged.

Further answering the last sub-paragraph of said paragraph 6, this defendant is particularly without knowledge, and therefore, denies that said Twin Falls Salmon River Land & Water Company was authorized or empowered, or is entitled to the use of 1500 cubic feet per second of the waters of said Salmon River to be diverted at the point of diversion, as alleged, or is otherwise entitled thereto other than subsequent to the right of this defendant herein to use the waters of said river, as hereinafter and in its Counter-Claim more fully set forth; and further denies that the said plaintiff is entitled to a right of diversion from the 29th day of December, 1906, as therein alleged; and denies that said plaintiff, and its successors in interest have priority to use all or any of said waters over this defendant from said date; and denies that said plaintiff requires the entire flow

of said Salmon River at said point of diversion to supply its right, as therein alleged.

And further denies that said plaintiff, or any one by reason of said alleged permits, diversions, or otherwise, are entitled to any of the flow of the waters of said Salmon River, except subject to the prior right therein and the use thereof by this defendant, as hereinafter and in the Counter-Claim herein more fully set forth.

7.

Answering paragraph 7, admits that said Salmon River is formed by various streams uniting in Elko County, Nevada, and running thence north out of said County and State into said Twin Falls County, Idaho, as therein alleged; and admits that a portion of the streams so forming said river lie in Twin Falls County, Idaho, and flow southwesterly into said Salmon River, in Elko County, State of Nevada; but in this regard alleges that there is only one such stream, to-wit, some small tributaries to what is known as Shoshone Creek that rise in said Twin Falls County, Idaho, and that aside therefrom all the waters of such river arise wholly within the State of Nevada.

8.

Answering paragraph 8, admits that in accordance with the contract set out the plaintiff, Twin Falls Salmon River Land & Water Company, should construct certain works provided for therein, and should organize a company, as therein set forth and alleged, to-wit, to be known as the Salmon River Canal Company, Limited, as in said contract set forth.

This defendant is without knowledge as to the contract between the United States of America and the State of Idaho, as therein set forth, and is without knowledge as to the 80,000 acres of land being thrown open for settlement, as in said paragraph alleged; and is further without knowledge that upwards of 500 persons have made entries of land upon said tract of land, as alleged, or that said persons have purchased shares of stock in the said plaintiff Salmon River Canal Company, Limited, as provided in said alleged contract; is without knowledge that said persons are desirous of using the waters of said streams for the irrigation of their lands, or any lands, under the provisions of the laws of the State of Idaho, as in said paragraph alleged.

9.

Answering paragraph 9, defendant is without knowledge as to whether said plaintiff Salmon River Canal Company, Limited, is the same Company set forth in the complaint therein, as found in Exhibit A, and is without knowledge that said company is the one whose shares of stock represent the water rights of the settlers upon the lands mentioned in said complaint, and is without knowledge as to whether said company is the one for whose use and benefit the irrigation works were constructed, if same were constructed, and is without knowledge as to whether said company is the one for whose use and benefit said water permits were acquired; and is without knowledge as to whether plaintiffs, respectively, as alleged, are the owners and holders of said irriga-

tion works and said water permit. And further denies specifically that said companies, or either of them, as alleged, are entitled to divert from said Salmon River, at the alleged point of diversion, 1500 cubic feet per second of time of the waters of said stream, or the entire flow thereof at the point of diversion, as alleged, and specifically denies that all the waters of said River, as alleged, are required for the irrigation of the lands mentioned in said complaint, and is without knowledge as to whether said lands, or all of them or any part thereof, are under or may be irrigated from said or any irrigation system of the plaintiffs herein.

10.

Admits that this defendant is the owner of lands in Elko County, State of Nevada, and as hereinafter more fully set forth in its Counter-claim, and which is hereby referred to to avoid repetition, and admits that it is the owner of certain lands in Twin Falls County, State of Idaho, irrigated from certain streams therein, or flowing therein, or therethrough, as tributaries of said Shoshone Creek.

Admits the other allegations of paragraph 10; but alleges that the service of process herein was not made upon the defendant personally by service upon any of its proper officers, but service was made only upon its designated agent in the said State of Idaho.

11.

Answering paragraph 11, this defendant admits that it has commenced, is constructing, and has been using canals and ditches in Elko County, Nevada, for

the purpose of appropriating, diverting and using the waters of said Salmon River and certain of its tributaries in said County and State as hereinafter more fully set forth, but denies that it prevents same from flowing down said stream into the said State of Idaho, or that it prevents the use of the waters of said stream by the plaintiffs herein or by the stockholders of said Salmon River Canal Company, or otherwise than it has a right so to do by reason of prior right, use and appropriation to that set forth in the complaint.

Admits that the defendant has and does divert and use a portion of the waters of said stream before the same reaches the alleged irrigation works of the plaintiff herein; but denies that it does so other than as it has a right so to do, as hereinafter more fully set forth; and denies that it prevents the use of the waters of said stream by the plaintiffs and the stockholders of said Salmon River Canal Company, Limited, as in said paragraph set forth.

Denies particularly the allegations of said paragraph that the rights of the defendant in said stream, or any part thereof, as alleged, are subsequent to or subject to any of the alleged rights of the plaintiff or of the stockholders of said Salmon River Canal Company, Limited.

12.

Answering paragraph 12, this defendant denies that the said plaintiffs, as therein alleged, are now or have been in the use or enjoyment of said Salmon River otherwise than as waters of same are permit-

ted to flow down after being used under the claims and rights of this defendant, and denies that it is using the entire flow of said stream, as therein alleged, for the irrigation of said alleged lands.

Denies the alleged priority of the plaintiffs herein, and admits that this defendant claims the right to the use of the waters of said river prior and superior to the rights of the plaintiffs, or either of them, and prior to the rights of the said stockholders of said Salmon River Canal Company, Limited.

13.

Alleges that the laws of the State of Nevada, existing at the time of the alleged appropriation by the plaintiffs and at and prior to the diversions, appropriations and user by the defendant, as hereinafter set forth, provided as follows: "All natural water courses and natural lakes and the waters thereof which are not held in private ownership belong to the State and are subject to appropriation for beneficial uses," and further alleges that the diversions, appropriation and uses of the water of said Salmon River and its tributaries by this defendant and its predecessors in interest have been and are for beneficial purposes and uses.

14.

That this defendant is informed and believes, and therefore alleges that there is a sufficient amount of water in said Salmon River, after supplying the rights and claims of this defendant, and flowing down therein, if properly conserved by the plaintiff, to properly irrigate all the available lands of the

plaintiff under cultivation, or that may be put into cultivation.

Further answering the prayer of the Complaint that the defendant set forth its claims to the waters of said Salmon River, and to that end, and by way of Amended Cross Bill or Counter-claim, this defendant alleges:

15.

That the said Twin Falls Salmon River Land & Water Company, as defendant, is informed and believes, is a corporation, organized and existing, under and by virtue of the laws of Delaware, and a citizen of said State, and authorized and empowered to do business in the State of Idaho.

And that the said Salmon River Canal Company, Limited, as defendant is informed and believes, is a corporation, organized and existing under the laws of the State of Idaho, and a citizen thereof.

16.

That this defendant and counter-claimant, the Vineyard Land & Stock Company, is a corporation, organized and existing, under and by virtue of the laws of the State of Utah, and a citizen thereof.

17.

That this defendant, and its predecessors in interest, now own, and for many years prior hereto have owned more than 25,000 acres of land, all arid in character and situated along the course of and within the water-sheds of what is known as Little Salmon River, and the tributaries thereof, mostly in Elko

County, State of Nevada, with a small portion in the State of Idaho, said tributaries being what are known as Nall Creek, Jakes Creek, Willow Springs Creek, Trout Creek, Shoshone Creek, and what is known as Warm Springs.

That said Salmon River is a non-navigable, interstate stream, originating (except as hereinafter set forth as to a minor tributary) wholly in the said State of Nevada, and running thence from said Elko County, north, into the State of Idaho, where it empties into Snake River, also an interstate stream. That some small branches of what is known as Shoshone Creek rise or run through said Twin Falls County, Idaho, and thence into said Shoshone Creek, and thereafter into said Salmon River, but that the amount of water used from said Shoshone Creek by defendant is far less than the flow of said stream after deducting the whole volume of such branches or tributaries, and that the amount of the waters of such tributaries flow down to plaintiffs.

18.

That the statutes and laws of the State of Nevada, as they existed at and prior to the alleged appropriation of the said plaintiffs, and at and prior to the time of the diversions, appropriations and user of the waters hereinafter set forth, by this defendant, provided as follows: "All natural water courses and natural lakes, and the waters thereof which are not held in private ownership, belong to the State, and are subject to appropriation for beneficial uses;" and that said appropriations, diversions and uses of the wa-

ters of said Salmon River by this defendant were and are for beneficial purposes and uses. That all the lands of this defendant in said County and State, or as may be situate within the State of Idaho, are arid in character, requiring artificial application of water to produce crops or grass, or verdure of any kind thereon, and that said defendant, and the other owners of lands in said Nevada, adjacent to and that may be irrigated from said river and its tributaries, are entitled to the prior rights to the appropriation, diversion and use thereof for such lands in cultivation or susceptible to being placed under cultivation, or requiring irrigation to produce crops or grasses thereon, and that said waters are necessary for such lands within said County and State.

19.

That along and upon said Salmon River and its tributaries, and within the water-sheds of such river, mostly in said Elko County, Nevada, and in irregular bodies, from the bulk of the land hereinbefore set forth, this defendant owns, and its predecessors owned for many years prior to the year 1906, and prior to the time of the alleged appropriation of the plaintiffs, about 18,000 acres of grazing and irrigable lands, susceptible to cultivation and the production of crops, wild and tame grasses, to-wit: About 13,500 acres thereof being immediately along and upon said river and its said tributaries, and in Townships 43, 44 and 45 North, of Range 63 E. M. D. M., in Townships 43, 44, 45, 46 and 47 North, of Range 64, E. M. D. M., and Townships 43, 44, 45 and 47 North, of

Range 65 E. M. D. M., in the State of Nevada and in Township 16 South, of Range 17 East, B. M., in Twin Falls County, Idaho, and situate upon, along and adjacent to what are known as Nall, Jakes, Willow Springs, Warm Springs, Trout and Shoshone Creek, and branches thereof, respectively, and said Salmon River proper.

That said lands are, and have been irrigated and rendered productive for crops and grazing purposes from the waters of said streams, part of same by flooding and sub-irrigation from the natural flow of said streams, and part from dams and ditches, and other means of spreading, flooding and otherwise utilizing the water upon said lands, and the remainder thereof by dams and ditches, wholly diverting the waters of said streams to and upon such respective lands.

That all said foregoing lands, with the waters for such irrigation thereof, have been, since long prior to the alleged appropriation of the plaintiffs, continuously diverted and used by the defendant, and its predecessors, for the growing of crops thereof, and for grazing and stock purposes, during each and every year.

That in addition to the foregoing lands so irrigated, and contiguous to those along Salmon River proper, this defendant owns and its predecessors owned for many years prior to the said year 1906, about 4500 acres of irrigable lands that are and may be watered from said Salmon River, and its tributaries thereabove, and lying below a certain main

ditch hereinafter described as the Harrell, Maxon or Big Ditch, and located in more or less irregular shape in Townships 46 and 47 North, of Range 64 E. M. D. M., and in townships 46 and 47 North, of Range 65 E. M. D. M., in said Elko County, Nevada.

That all of said last described lands are arid in character and will not produce hay, grain, vegetables, grasses, or other growth thereon without the application and use of the waters of said streams thereon.

20.

That during the irrigation season of each and every year since long prior to the alleged appropriations of plaintiffs, the defendant has been entitled to and did, during all the times hereinbefore set forth, and long prior to the alleged appropriations of plaintiffs, divert and use all the waters of what is known as Nall Creek, Jakes Creek, Willow Springs Creek and Trout Creek, upon the lands described herein as using the same in said Nevada, and has likewise used all the waters from what is known as Warm Springs; and that during such season none of the waters thereof have or did reach said Salmon River.

21.

That if said land, hereinbefore described, about 1000 acres is situated upon said Shoshone Creek and its tributaries, in said Twin Falls and Elko Counties, and is irrigated therefrom, and defendant is entitled, by prior diversion and use, to said waters for irrigation of such lands. That one or two small

tributaries of said Shoshone Creek, of very small flow of water, having their source in Twin Falls County, Idaho, empty into and become a part of said Shoshone Creek, but that the volume of water that constantly flows from said Shoshone Creek into said Salmon River is at all seasons far in excess of the amount and volume of water emptying from said Idaho tributaries into said Shoshone Creek.

22.

That for said described tract of land of about 4500 acres, as hereinbefore set forth, under what is known as the Harrell, Maxon or Big Ditch, the predecessors of this defendant, in the years 1892 and 1897, appropriated 5000 miners' inches and 200 cubic feet per second, respectively, of the waters of said Salmon River for irrigating said lands, and pursuant to such appropriations and thereafter by actual diversion, appropriation and user, and by means of dams and ditches, and canals of sufficient size and capacity, diverted said water and commenced the use thereof in bringing said lands under proper cultivation, and since said time the said predecessors of this defendant, as rapidly as conditions, their circumstances and means permitted, carried on the construction of such ditches and the placing of said lands under cultivation, and this defendant since becoming the owner of said lands and water rights, has continued and is now completing said use and the placing of said lands under cultivation as fast as conditions and circumstances permit.

23.

That for the successful irrigation of all of said lands, and to produce crops or grasses, for cutting or grazing, it required at least a cubic foot per second for each 50 acres thereof.

24.

That this defendant is now, and its predecessors have been, in the use and enjoyment of the waters of said Salmon River, and its said tributaries, during each and every irrigating season, and for irrigating the whole extent of said lands herein set forth as cultivated, used for grazing or otherwise, since long prior to the alleged claims of plaintiffs herein; and have, in the low season of each and every year, diverted and used, since long prior to the alleged appropriation of the plaintiffs, and have been, and are, entitled to so divert and use the whole of the waters of said Salmon River, and its tributaries at its lowest canal above what is known as said Shoshone Creek; and has been, and is, entitled to have the use of all of said described lands as heretofore, and theretofore, cultivated or otherwise grazed or used for beneficial uses, and has been and is entitled to all the necessary water from said streams required to produce such crops or grasses as heretofore has been done, or as may be necessary to irrigate the same, and to have the beneficial use thereof by any other or different methods of irrigation.

That notwithstanding the right to divert and use, and the actual diversion and use thereof, as hereinbefore set forth, and the appropriation of all the

waters of said streams, a large portion thereof finds its way back to the channel of said river and flows down to the point of diversion of the plaintiffs, and, together with other waters reaching the said reservoir of the plaintiffs, is sufficient for the proper irrigation of all the lands of plaintiffs heretofore or now irrigated.

That, as this defendant is informed and believes, and so alleges, said plaintiffs do not conserve or utilize all of the waters flowing down to said reservoir, but, on the contrary, permit large volumes of the water reaching such reservoir to escape therefrom during all seasons and to be thereby wholly wasted for any beneficial or other use to the plaintiffs.

25.

That the claims and rights of said plaintiffs to said waters, herein set forth, if any, are inferior to and subject to the rights therein and of the defendant for the irrigation and beneficial use of its lands heretofore and now used, cultivated or irrigated, as well as for all additional lands in course of reduction to cultivation, and for which the waters of said streams have been diverted or appropriated, or to which said waters are being actually applied and proposed to be applied under such diversions and appropriation and user.

26.

Wherefore, your orator prays that said plaintiffs take nothing under their Bill and Prayer, and particularly that they take nothing as against this de-

defendant as to the decreeing of their rights as superior to those of the defendant, and that no injunctive relief thereon be granted to plaintiffs; and that this defendant be adjudged and decreed to have a superior and first right to the waters of said streams, and this counter-claim set forth, to the extent of the irrigation, cultivation or otherwise of the lands heretofore and prior hereto put to a beneficial use, and for those now being and under appropriation proposed to be put to beneficial use, and that said plaintiffs, their agents, servants, employees and successors in interest be forever restrained and enjoined from in any manner interfering with the use and right to the use of the waters by this defendant, its successors or assigns for the beneficial use of such lands, and for such other and further relief as may seem meet and proper in the premises.

Wherefore, your Petitioner prays for relief in accordance with the facts and allegations herein set forth.

VINEYARD LAND & STOCK COMPANY,

By C. A. Boyd.

BOYD, DEVINE & ECCLES,

301-4 First National Bank Bldg., Ogden, Utah,

Its Solicitors.

N. M. Ruick, Boise, Idaho.

Endorsed: Filed April 27, 1914.

A. L. Richardson, Clerk.

(Title of Court and Cause.)

ANSWER TO AMENDED CROSS-BILL OR
COUNTERCLAIM.

Comes now the plaintiffs herein answering the amended cross-bill or counter-claim filed in the above cause and say :

1.

That plaintiffs admit the ownership by the defendant of some lands in Elko County, State of Nevada, but as to the area thereof, they have no knowledge or information sufficient to enable them to answer and therefore deny that the said defendant is the owner of more than 25,000 acres of land, arid in character, situated along the course of or within the water sheds of the Little Salmon River and its tributaries.

Plaintiffs deny that said Salmon River originates, except as to a minor tributary mentioned in the counter-claim, wholly in the State of Nevada, and deny that the amount of water used from Shoshone Creek by the defendant is less than the flow of the stream after deducting the whole volume of the branches or tributaries mentioned in paragraph seventeen of the counter-claim herein, and deny that the amount of the water of such tributaries flows down to plaintiffs.

2.

That plaintiffs have no knowledge, information or belief sufficient to enable them to answer with regard to the statutes and laws of the State of Nevada as existed at and prior to plaintiff's appropriations, and at and prior to the time of diversions, appropriations,

and users of the waters claimed by the defendant in said counter-claim, and therefore deny the same as set forth in paragraph eighteen of said counter-claim.

Plaintiffs deny that all of the lands of the defendant in the State of Nevada, or such portion of them as may be situate in the State of Idaho, are arid in character or require artificial application of water to produce crops or grass, and deny that defendant or the other owners of land in Nevada adjacent to and that may be irrigated from the Salmon River and its tributaries are entitled to prior rights of appropriation, diversion or use of the waters of said stream or streams for such lands in cultivation, or susceptible to being placed under cultivation or requiring irrigation to produce crops or grasses thereon, or that said waters are necessary for such land within said State.

3.

That plaintiffs have no knowledge, information or belief sufficient to enable them to answer as to whether or not the defendant or its predecessors in interest for many years prior to 1906, or prior to the time of the plaintiffs' appropriation of the waters of the Salmon River owned 18,000 acres of grazing or irrigable lands susceptible to cultivation and the production of crops of wild or tame grasses or any other crops, or whether about 13,500 acres thereof or any other amount was immediately along and upon said river or its tributaries in the townships mentioned in paragraph nineteen of the counter-claim herein, and

therefore deny the same and each and every allegation of the said paragraph nineteen, and plaintiffs deny that the said lands mentioned in said paragraph are or have been irrigated or rendered productive for crops or grazing purposes from the waters of the stream mentioned in said counter-claim, or otherwise either by flooding or sub-irrigation from the natural flow of said streams or from dams or ditches, or from any other means whatever either by dams or ditches diverting the waters of said stream or streams, or by any other appliances or means. Plaintiffs deny that said lands described in said counter-claim, with the waters for the irrigation thereof, have been, prior to the appropriations of the plaintiffs, continuously diverted or diverted at all, or used by the defendant or its predecessors for the growing of crops, or for grazing or stock purposes during each and every year or during any year.

Upon information and belief, plaintiffs deny that in addition to the lands mentioned in the first three subdivisions of paragraph nineteen of the counter-claim herein and contiguous to the lands of the defendant along the Salmon River proper that the defendant owns or its predecessors owned prior to the year 1906, 4500 or any other number of acres of irrigable lands that are or may be watered from the Salmon River or its tributaries and lying below a certain main ditch known as the Harrell, Maxon or Big Ditch and located in Townships forty-six and forty-seven North of Range sixty-four E. M. D. M., and in Townships forty-six and forty-seven North of

Range sixty-five E. M. D. M., in Elko County, State of Nevada, and plaintiffs deny that the lands last described are arid in character or that they will not produce crops without the application or use of water from the streams mentioned in the counter-claim.

4.

Plaintiffs deny that during the irrigation season of each and every year since the time and prior to the appropriation of the plaintiffs, that the defendant has been entitled to or did during the times set forth in the counter-claim herein, or prior to the appropriation of the plaintiffs divert or use all or any of the waters of what is known as Nall Creek, Jakes Creek, Willow Springs Creek or Trout Creek upon the lands described in the counterclaim herein in the said State of Nevada, or that it has likewise used the waters from what is known as Warm Springs, and plaintiffs deny that during the season or seasons mentioned in paragraph twenty of the counter-claim herein, that none of the waters of said streams have reached or did reach the said Salmon River.

5.

Plaintiffs deny that a thousand acres of the lands mentioned in paragraph twenty-one of the counter-claim herein, or any part thereof, are irrigated from Shoshone Creek, and deny that the defendant is entitled by a prior diversion or use to the said waters for the irrigation of such lands, and plaintiffs deny that the volume of water that constantly flows from Shoshone Creek into Salmon River is at all seasons

or at any time in excess in amount of the volume of water emptying from the tributaries of said stream in Idaho to said Shoshone Creek.

6.

Plaintiffs on information and belief deny that for the tract of land of about 4500 acres or any part thereof, mentioned in paragraph 22 of the counterclaim herein under what is known as the Harrell, Maxon or Big Ditch, that the predecessors of the defendant in the years 1892 and 1897, or at any other time appropriated 5,000 miners' inches and 200 cubic feet per second of water respectively of the waters of the Salmon River for irrigating said lands, and deny that pursuant to such appropriations, or thereafter by actual diversion, appropriation or user or by means of dams or ditches or canals of sufficient or any size or capacity, that the said defendant or its predecessors in interest diverted said water or any part thereof or commenced the use thereof in bringing said lands under cultivation, and deny that since said time, said predecessors of the defendant as rapidly as conditions and circumstances or means permitted, or otherwise, or at all, with any diligence whatever, carried on the construction of such ditches or the placing of said lands under cultivation, and deny that defendant since becoming the owner of said lands and water rights has continued or is now completing the said use and the placing of said lands under cultivation, as fast as conditions and circumstances permit.

7.

Plaintiffs deny that for the successful irrigation of the lands described in the counter-claim and to produce crops or grasses thereon for cutting or grazing, that it requires a cubic foot per second of water for each fifty acres thereof, or any water whatever.

8.

Plaintiffs deny that the defendant is now or that its predecessors have been in the use and enjoyment of the waters of the said Salmon River and its tributaries, or any of them during each and every irrigation season, or for irrigating the whole extent or any portion of the lands mentioned in paragraph twenty-four of the counter-claim herein, either using for grazing or otherwise from a time long prior to the claim of the plaintiffs herein or from any time prior thereto, and plaintiffs deny that the defendant or its predecessors in interest have in the low season of each or every year, or any year, diverted or used since a date prior to the appropriation of the plaintiffs, or that they have been, or it has been or is entitled to divert or use the whole or any portion of the waters of the said Salmon River, or its tributaries at its lowest canal above what is known as Shoshone Creek, or at any other point, or that it has been or is entitled to have the use of all or any portion of the lands mentioned in paragraph twenty-four of the counter-claim herein or of the waters of any of said streams mentioned in the counter-claim for use thereon for irrigation or other purposes, or to have the beneficial use thereof by any means or methods whatever.

Plaintiffs deny that a large portion or any portion except an inconsiderable portion of the water of the streams described in the counter-claim finds its way back into the channel of the said Salmon River, or that it flows down to the point of plaintiffs' diversion, and deny that the said water finding its way back to the channel of said river, together with other waters reaching the reservoir of the plaintiffs, is sufficient for the proper irrigation of all the lands segregated to the use of the plaintiffs. Plaintiffs deny that they do not conserve or utilize all of the waters flowing down to the said reservoir of the plaintiffs, and deny that they permit a large or any volume of water reaching said reservoir to escape therefrom at any time, or to be wasted.

9.

Plaintiffs deny that the claims and the rights of the plaintiffs herein are inferior to or subject to the rights of the defendant for the irrigation and beneficial use of its land heretofore or now used, cultivated or irrigated, as well as for additional lands in course of reduction to cultivation for which the waters of said streams are claimed by the defendant, or to which the waters of said streams are being actually applied or are proposed to be applied, but on the contrary, plaintiffs allege that their right to the water of said stream is prior and superior to that of the defendant.

Wherefore plaintiffs pray that the amended cross-bill or counter-claim herein be dismissed and that the

defendant take nothing thereby, and pray that plaintiffs be granted all proper relief.

S. H. HAYS,

P. B. CARTER,

Solicitors for Plaintiffs,

Residing at Boise, Idaho.

(Duly verified.)

Endorsed: Filed May 18, 1914.

A. L. Richardson, Clerk.

By E. B. Yarrington, Deputy.

(Title of Court and Cause.)

PROPOSED AMENDMENT TO THE ANSWER.

The Defendant, by leave of the Court first had and obtained, hereby amends its answer herein by adding thereto the following:

For further answer the defendant says that there is a defect of parties herein in that there are numerous persons not parties to this suit in Nevada and Idaho, who have, or claim to have, rights and interests in and to the waters of said Salmon River and its tributaries; that among the persons in Nevada who have, or claim to have, rights and interests in and to said waters are the following: James P. O'Neil, W. T. O'Neil and Richard O'Neil; that among the persons in Idaho who have, or claim to have, rights and interests in and to said waters are the following: Billy A. Vliet, Emile Brown, E. R. Chandler, H. L. Hansen, H. B. Lorain, J. T. Willis, Bryant Willis, S. C. Sexton, O. A. Schnitker, H. E. Prothero, W. L. Howard, Bertha N. Atherton, Peter

O. Atherton, Helen Brown, H. E. Reed, Mary E. Reed, Bonita Brotherton, Phil Hardy, James B. Rice, Henry B. Carr, Lorenzo Graehl, E. J. Rork, Lester E. Joslin, W. A. Beckley, D. C. Workman, Otto Hansen, F. C. Redtke, John Cline, A. J. Gidney, Alice E. Norton, J. D. Sawyers, J. F. Walker and Matilda Loo.

That complete justice cannot be done between plaintiffs and defendants herein and the title to the waters of said streams cannot be adjudicated completely unless all persons claiming interests as aforesaid in and to the subject matter of this litigation are made parties to this suit.

EDWIN SNOW,

C. A. BOYD,

ANDREW HOWAT,

HERBERT R. MACMILLAN,

FRANK K. NEBEKER,

Solicitors for Defendant.

Endorsed: Filed April 20, 1915.

A. L. Richardson, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

STATEMENT OF EVIDENCE INTRODUCED
BY THE PARTIES TO SAID CAUSE AND
ALL PROCEEDINGS HAD AT THE TRIAL
THEREOF.

(All exhibits incorporated in printed transcript are appended at the end of this statement of the oral evidence.)

MR. HAYS: If the Court please, we desire to introduce in evidence the articles of agreement between the Secretary of the Interior for and on behalf of the United States, and Frank R. Gooding, Governor, and President of the State Board of Land Commissioners of Idaho, for and on behalf of the State of Idaho, for contracts providing for the segregation and irrigation by the State and ultimate patenting to the State of the lands mentioned in the segregation list No. 14. The list of lands is here omitted, as they are in subsequent papers, and it is agreed between counsel that that list is the list situate in the Townships and Ranges mentioned in the complaint, the total area involved in these articles of agreement being 127,000 acres, approximately.

MR. NEBEKER: We have no objection as to the competency of the proof. We object as immaterial and irrelevant.

THE COURT: The objection will be overruled. It may be understood that you have exceptions to all adverse rulings.

MR. HAYS: We offer in evidence, if the Court please, copy of an agreement between the State of Idaho and the Twin Falls Salmon River Land & Water Company, dated the 30th day of April, 1908, being the contract for the construction of the irrigation works for the lands specified in segregation list No. 14, as well as other lands that might be irrigable from the works; the list of lands is likewise not attached to this contract, being the same as that contained in the previous agreement, and being situated in the

townships and ranges mentioned in the complaint. We will offer them in evidence.

MR. NEBEKER: This is objected to as immaterial and irrelevant.

THE COURT: The same ruling.

MR. HAYS: We ask that the articles of agreement between the United States and the State be marked as Plaintiffs' Exhibit No. 1.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 1.*

MR. HAYS: And that the agreement between the State of Idaho and the Twin Falls Salmon River Land & Water Company, of date April 30, 1908, be marked as Plaintiffs' Exhibit No. 2.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 2.*

MR. HAYS: We offer in evidence application for permit No. 3493, the name of the applicant being John E. Hays, of Twin Falls. The application is numbered 3493, and at the end thereof is endorsed as permit No. 2659. We offer this in evidence.

We also offer in evidence a deed dated January 26, 1912, between John E. Hays and the Twin Falls Salmon River Land & Water Company, purporting to convey his rights under permit 2659.

We also offer in evidence a certificate of the completion of works under permit 2659, being a certificate given by the State Engineer of the State of Idaho.

THE COURT: What is the date of it?

MR. HAYS: Dated May 14, 1912.

We also offer in evidence the bond given under the permit, being a bond dated on the 13th of May, 1907.

THE COURT: These are all offered as Exhibit No. 3?

MR. HAYS: We offer this in evidence and ask that it be marked as Exhibit No. 3, all of these documents being bound together.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 3.*

MR. HAYS: We offer in evidence application for water permit No. 4313, which was ultimately issued as water permit No. 3267, for the appropriation of the waters of Salmon River; also warranty deed from John E. Hays, the appropriator, to the Twin Falls Salmon River Land & Water Company, dated November 19, 1912, purporting to convey under said permit, and a certificate of the completion of the works under said permit No. 3267, issued by the State Engineer of the State of Idaho on the 25th day of January, 1913; also the bond given under said permit, dated January 20, 1908.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 4.*

MR. HAYS: If the Court please, we ask that application No. 4313, which was issued as permit No. 3267; also the warranty deed from John E. Hays to the Twin Falls Salmon River Land & Water Company, the certificate of completion of works under permit 3267, and the bond given on the water permit, all of which are bound up together, be introduced in evidence and marked as Plaintiffs' Exhibit No. 4.

MR. HAYS: I desire to offer in evidence application for permit 7466, which was finally issued as permit 5519, for the diversion of the waters of Salmon River, said permit being taken out by D. C. MacWatters; also a deed dated September 30, 1914, from D. C. MacWatters to the Twin Falls Salmon River Land & Water Company, purporting to convey permit No. 5519; also the bond given in connection with said permit.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 5.*

MR. HAYS: We offer in evidence a form of agreement entered into between the Twin Falls Salmon River Land & Water Company and the purchasers of land under the irrigation project of that Company. This is simply the form of agreement entered into by the settlers, and I believe it may be stipulated that this is the form of agreement that the Carey Act entrymen on said project entered into.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 6.*

E. B. DARLINGTON, a witness duly called and sworn on behalf of plaintiffs, testified as follows:

I am a civil engineer and occupy the position of Chief Engineer and Water Master for the Twin Falls Salmon River Land & Water Company and the Salmon River Canal Company. I am familiar with the lands contained in segregation list No. 14, and said lands are generally known as the lands contained in what is called the Salmon River project.

Plaintiffs' Exhibit No. 7 is a map of the Salmon

River segregation project ; it shows the contract numbers of each contract sold to entrymen, and the route of the canals, the position of the dam, reservoir, and the layout of the system.

Plaintiffs offered Plaintiffs' Exhibit No. 7, to which defendant objected as incompetent, irrelevant and immaterial. Said objection was by the Court overruled.

Mr. Darlington (continuing) :

The project is a storage project, depending for its supply on a large reservoir, which is impounded behind a masonry dam 230 feet high. The water is diverted through a tunnel into the canal system, and there are approximately 250 miles of laterals. The main canal is a channel 60 feet wide on the bottom, with slopes of 2 to 1, with a capacity of about 1,250 second feet. That is divided about ten miles below the dam into two main laterals, each with a capacity of about 500 second feet, what is known as the No. 1 and the No. 2 systems; No. 1 system running to the east of the project, and No. 2 to the west of the project, branching and sub-branching into smaller distributaries until the entire project is served, a project of about between 90,000 and 100,000 acres, served from it.

The storage dam is 450 feet on the top in length, and the thickness of the base is about 110 feet; it is rubble masonry and contains about 150,000 cubic yards of material.

Plaintiffs offered Plaintiffs' Exhibit No. 8, being

a photograph illustrating top, part of back and part of front of the dam.

Mr. Darlington (continuing) :

The tunnel is about 83 feet below the top of the dam and is not quite 150 feet above the bottom of the canyon. Below the mouth of the tunnel the dam acts as a diversion dam. The reservoir is in the bed of Salmon River and is from a quarter of a mile to a mile wide and at maximum high water would extend back about 16 miles. It is a reservoir of more than ordinary depth for its capacity. I do not think I could give the average depth. I have been on the Salmon River project since February, 1909. The dam had been started when I went there; the canal system had not been started. I started the surveys for the canal system and stayed there through construction and the last four years during the operation of the system. I was Assistant Chief Engineer at the time of construction and later operated the system. Last year there were a little over 30,000 acres in actual cultivation. The total acreage of the entries represented by the owners whose land was cultivated was 45,000 acres. There were a little over 73,000 acres represented by contracts sold. The land is not in a solid body. The entire project of 90,000 acres is dotted with farms representing about 30,000 acres with crops. Water was first turned in on the project in 1911, about the 1st of May. General irrigation did not start until in June, 1911. Water was turned on about the 20th of May for testing the project. Three runs were made during the year 1911.

The towns of Hollister, Rogerson, Amsterdam and Berger are located upon the project. A branch line of the Oregon Short Line extends from Twin Falls through the towns of Berger, Hollister and Amsterdam to Rogerson, the southern terminus of the branch. The elevation of the land varies from 5,000 feet on the southern border to about 4,000 on the northern border. Crops are largely grain, alfalfa and other grasses. Three crops of alfalfa are raised in a season. The lands constitute the ordinary sagebrush desert with volcanic ash soil and I regard the water as necessary to produce ordinary agricultural crops. The available capacity of the reservoir is 180,000 acre feet. The total capacity is 220,000 acre feet. There is no other source that I know of from which these lands could be irrigated. The railroad was built during 1910. Construction of the ditch and canal system started in the spring of 1909 and continued into 1911, when it was made ready for operation. The system has been operated during the years 1911, 1912, 1913 and 1914. In 1911 there were about 6,000 acres in crop; in 1912, 16,000 acres; in 1913, 23,000 acres, and in 1914, 30,000 acres. There is considerable land being cleared and put under cultivation this spring that was not in last year; we look for a gain of from 3,000 to 5,000 acres this year. I am familiar with the flow of Salmon River as shown by the records of the company and the geological survey. According to the records of the company the annual flow in 1908 was 121,265 acre feet; in 1909 it was 132,782 acre feet; in 1910 it was 149,-

946 acre feet; in 1911 it was 96,571 acre feet; in 1912 it was 169,888 acre feet; in 1913 it was 108,405 acre feet; in 1914 it was 135,295 acre feet. The measurements were made up to 1910 just above the Salmon River dam; after that they were made about 20 miles above the dam. The measurements do not take into consideration any diversions above the dam. The average annual flow, as shown by the geological survey, is 127,000 acre feet, and as shown by the records of the company, 130,600 acre feet. I have had experience with the distribution of water for irrigation purposes since 1903; have read a good many of the authorities and have done the work itself. I have looked after farming operations on my own account and for others. I think it requires an application of at least an acre foot and a half to the acre for the lands under this canal system.

I am more or less familiar with the lands and canals of the defendant Vineyard Land & Stock Company along the Salmon River. I first inspected these lands in the spring of 1910. I have been there a good many times. These lands are about 25 miles above the dam and extend from the mouth of Shoshone Creek up to a point about 10 miles above Contact.

(Plaintiffs thereupon had a certain blue-print, purporting to be a diagram of the defendant's properties on the Salmon River, marked Plaintiffs' Exhibit No. 11, and the witness located thereon the course of the stream, defendant's ranch known as San Jacinto, including the postoffice and store building, the

entrance to Bore's Nest Canyon, Shoshone Creek, Trout Creek, Jake's Creek and Meadow Creek, and the defendant's Vineyard ranch in Township 44 North, Range 63 East.)

Mr. Darlington (continuing):

I first visited the Vineyard ranch in October, 1911. It consists of alluvial flats, largely covered with willows; the pastures are grown up to rye grass and cut up with sloughs. It is a typical mountain meadow country. There are probably 200 or 300 acres on the ranch, mostly in section 15, used for wild hay and pasture land; I haven't exact figures of the acreage. It was wild hay meadows, natural sod and pasture land.

Plaintiffs' Exhibit No. 12 is a photograph of the Vineyard field looking northeast from the house in section 15. It is a photograph taken in January, 1912. Plaintiffs' Exhibit No. 13 is a photograph of the Vineyard field, taken in October, 1911, from a point on the west side of section 15, looking northeasterly across Jake's Creek. Plaintiffs' Exhibit No. 14 is a photograph of a brush dam at the head of the old Vineyard ditch. The head of the ditch is in the northeast part of section 16, 44 north, 63 east, and extends easterly and somewhat northerly. The ditch runs off to the foreground and the river flows off through the center of the picture. The picture was taken last week. In 1911 when I first saw the Vineyard ditch it was an old ditch that was taken out of the river by means of a brush dam with no head-works, no regulating device at all. This is indicated

in Exhibit No. 14. It extended easterly to Jake's Creek, picked up the waters of Jake's Creek and continued on down the meadow to a point close to the line between sections 14 and 15. The water has been used from that ditch out on these meadows. The ditch was cut in places and the water flooded out over the meadows into the sloughs. There were no lateral ditches unless there might be a few furrows plowed across the field to help conduct the water across the meadows. I think the area irrigated at that time was between 200 and 300 acres. There was a ditch partially built that was planned to come out of the canyon about a mile above the old ditch. There had to be a tunnel but it was not built at that time. It was about 120 feet long. About 3,000 feet at the upper end of the ditch was not built. Parts of the ditch along near the crossing of Jake's Creek were not built. The ditch on Jake's Creek for about a mile or perhaps a mile and a half was built. On Plaintiffs' Exhibit No. 11 I have marked in red the parts that were built and by a dotted line in red the parts that were not built. The old ditch is marked in green. The new ditch has been completed since my visit in 1911 and extends back from the Vineyard house about two miles into the northwest quarter of section 8. The ditch has been extended from the point where I saw it about three miles further down the river. I have marked on Plaintiffs' Exhibit No. 11 in yellow the point where the ditch ended when I first saw it. There are about 600 additional acres put under the new ditch. When I first saw these tracts there was

a ditch out of the east side of the river through sections 9 and 16 and into section 4, called the Bird's Nest ditch. This is shown on Plaintiffs' Exhibit No. 11. This served the Upper Middle Stack field, which was a hay field and pasture, and was of the same general character as the Vineyard field. There were no distribution ditches, except the coulees, that turned the water out into the sloughs across the pastures and meadows. This ditch was somewhat improved last year but no new land brought under it so far as I know. There were 327 1-2 acres irrigated in the Middle Stack field. This does not include about 135 acres in section 4, in the Upper Middle Stack field. The land was not cultivated, but was wild hay meadow. Plaintiffs' Exhibits No. 15 and No. 16 are photographs of that locality, and show the head of the Bird's Nest ditch. These photographs were taken last week and they show about the same condition as when I first saw the place in the fall of 1911. There are no diversion works, simply a brush dam with a plank across it as at the present time. Perhaps a mile down the ditch there is a waste gate for turning out the extra water. This did not exist when I first saw it. Plaintiffs' Exhibit No. 17 is a photograph that represents the typical meadow at the Middle Stack field in section 27. It was taken on the first of January, 1912, from the top of a hay-stack, looking northeasterly. In 1910 I first crossed the ditch in sections 27 and 34, township 46 north, 64 east. I went up to the San Jacinto ranch in section 14 and crossed the ditch marked in red upon the map

at this point. The ditch had been built to a point about 300 yards below the road in section 13. It is known as the Harrell ditch and is marked in red. It heads in section 34, and the course of it is north-easterly parallel to the river. The end of it is marked in red on this map in section 13. There was a strip of sagebrush land all along the canal until it got up near the head. I don't know what the condition was at that time, but from observations from the road here that was a strip of sagebrush along parallel to the river and then wild hay meadows along the river. There was a ditch on the Bridge ranch at that time. I can't say as to 1910 whether there was any land irrigated in the vicinity of San Jacinto other than as mentioned because I was just making a hurried trip across it. Further to the north in ranges 64 and 65 east, 47 north, there were wild hay meadows and pastures along the river and a large bench still in sagebrush above the river. The Bridge ranch is on Shoshone Creek about two miles above the mouth. Shoshone Creek empties into the Salmon in section 23. There were about 160 acres cultivated; that is, it was in wild hay. In 1911 most of the land on the San Jacinto ranch on the east side of the river and between the river and the Harrell ditch was still in sagebrush. There were two branches of the river at San Jacinto and the part between the two branches is known as the island. A considerable part of the island was in wild hay and pasture, and there was a stretch all along the Harrell ditch in sagebrush. Besides the Harrell ditch there was the Warm

Springs ditch, shown on the map. It heads in the southeastern corner of section 22 in a spring, and flows northerly. It was about two and a half miles long. It irrigated about 150 acres, I think. It is hard to tell just what was under each ditch because they intermingle more or less. The total area irrigated from the Salmon River, in all of the Salmon River ditches, in 1911, was 2,265 acres. I can't tell how much land was irrigated from the lower Vineyard ditch and Jake's Creek. Some land had been irrigated from the Roland slough, a little strip from the Harrell ditch, some land from the San Jacinto ditch that comes out of the river just above the Warm Springs, some from the Warm Springs ditch, some from the Fisher ditch, as shown on the map. A ditch also comes out in the Bore's Nest field. They are all from the Salmon River except the Warm Springs ditch. The map contains the areas that are irrigated from each canal. On the Vineyard ranch there are 305 acres of hay, irrigated from Salmon River, and 41 acres of pasture flooded by high water; 124 acres irrigated from Jake's Creek, and in addition to that 18.3 acres of pasture. From the Bird's Nest ditch there was 327½ acres in the Upper Middle Stack field; 135 acres of hay, of that, was in the Upper Middle Stack pasture, and 327½ acres of pasture. On the east side of the river there was 57.6 acres of pasture irrigated from sloughs. From the Harrell ditch 177 acres of hay and 109 acres of pasture; also a little block of about 18 acres of oats. On the west side of the river from the Warm Springs

and San Jacinto ditches 21 acres of alfalfa; another field containing 119 acres of alfalfa, 21 acres of wheat, and that water wasted down on what is known as the Bore's Nest field. There is no way of knowing what part of it was irrigated from that water and what part from the Fisher ditch. Waste water from those ditches irrigated 30 acres of hay, 9 acres of oats, another field of 26 acres of hay, and another field of 35 acres of hay. When I speak of hay I mean wild native hay. When I speak of meadow I mean natural grass pasture and not the hay that is cut for forage. The two pieces of alfalfa and two of oats were the only cultivated crops along the Salmon River that I know of. The pastures are the flats along the river that are overgrown with willows and rye grass and cut up with sloughs. They are not cut for hay. They are just natural fields not used for anything but to pasture stock. They were irrigated largely, if at all, from inundation. The flood waters of the river rose up high enough to come up over the flats; not systematically irrigated. The total area watered from Salmon River was 2,265 acres; from Shoshone Creek, 160 acres; from Jake's Creek, 143 acres. That does not include the pastures that were flooded from the creeks. It includes pastures and hay fields that were irrigated from water diverted from the river by means of ditches, and sometimes simply by turning it into sloughs, or by damming up the river and spreading it out in the natural sloughs and running it out on the meadows in that way. During the year 1911 the Harrell ditch was built to a

point probably a mile and a half further north and somewhat east into section 7, and since that time it has been extended almost down to Shoshone Creek, to a point marked on the plat in a green line. About 5,000 acres additional area has been brought under ditch by new construction since 1911. In 1914, according to the report made by a representative of the Geological Survey, the total diversions upon the ranches of the Vineyard Company amounted to 17,206 acre feet. This water was used on all the meadows that I have described along the river, and on 1,700 acres of new land under this ditch extension.

(Plaintiff then offered Plaintiffs' Exhibit No. 11, and the same was received in evidence. On account of the size and contents of this exhibit it is not practicable to set forth the same here. By stipulation of the parties and pursuant to an order of the presiding judge, this and other original exhibits and papers not capable of being conveniently set forth herein, are transmitted separately to the appellate court.)

Plaintiffs' Exhibit No. 18 was thereupon offered and received in evidence.

Mr. Darlington (continuing) :

The lands colored in red on Plaintiffs' Exhibit No. 18 are wild hay lands; those colored in orange are pasture lands that have been irrigated; those colored in green have been newly cultivated or cleared. This piece of about 30 acres on the Vineyard has just recently been cleared. About 1700 acres along east of the San Jacinto is what is known as the Trout Creek bottom.

Plaintiffs' Exhibit No. 19 was thereupon offered in evidence.

Mr. Darlington (continuing) :

Plaintiffs' Exhibit No. 19 is a picture of the head-works of the Harrell ditch as it existed in 1911. At that time there were no head-works, simply a brush, rock and manure dam for turning the water out into the ditch. There was a waste gate about 500 feet below the head-works for turning the water back into the river.

Plaintiffs' Exhibit No. 20 (also offered in evidence) is a photograph of the Bore's Nest field and illustrates the type of checks used for spreading the water out on the meadows; just an earth and manure dam to back up the water and spread it out over the meadow. The photograph was taken in the Bore's Nest field in section 26, 64 east, 47 north, in December, 1911. Plaintiffs' Exhibit No. 19 was taken in October, 1911.

Plaintiffs' Exhibit No. 21 (also offered in evidence) is a photograph representing the store and camp buildings at San Jacinto, the headquarters ranch of the Vineyard Land & Stock Company, in section 14, 64 east and 46 north. Plaintiffs' Exhibit No. 22 (also offered in evidence) is a photograph representing the Warm Springs ditch and a brush and manure dam for turning the water out into the San Jacinto ditch. Those two ditches run parallel and the water is turned from one into the other. The scene of it would be shown on the map in the south-east quarter of section 22, at the head of the Warm

Springs ditch. This photograph was taken in December, 1911, or January, 1912, and the picture of San Jacinto, including the store, was taken at the same time. Plaintiffs' Exhibit No. 23 (also offered in evidence) is a photograph of the Bird's Nest ditch that comes out of the river in section 21, 45 north, 64 east, and shows the general type of the land that is surveyed and also how the water was taken out through a cut in the bank. Plaintiffs' Exhibit No. 24 (also offered in evidence) is a photograph of the head of the Fisher ditch, which heads in section 14, 46 north, 64 east, showing the type of brush, rock and pole dam, and the willow lands through which the ditch runs. It was taken in December, 1911. Plaintiffs' Exhibit No. 23 was taken in the summer of 1912. Plaintiffs' Exhibit No. 25 (also offered in evidence) is a photograph of the pole and brush dam at the head of Shoshone Creek ditch, heading in section 17, 47 north, 65 east, and was taken last week. Plaintiffs' Exhibit No. 26 (also offered in evidence) is a photograph representing the dam and head of the Shoshone Creek ditch; just an open diversion without any controlling works, located in section 17, 47 north, 65 east. It was taken last week. The elevation at the Vineyard is about 5,600 feet; at the Bridge ranch at about 5,400 feet. The country along the river is an alluvial flat, shown by the colors, except the green color, on Exhibit 18. Alluvial soil on top of gravel. Lands marked in green are sagebrush lands; rather heavy soil, somewhat gravelly. The native vegetation on the river bottoms is mostly wil-

lows, bunch grass, rye grass. Rye grass is a coarse grass that grows tall and looks a good deal like grain and rye; it grows in bunches; some little greasewood. A good deal of the bottom land shows alkali; not much vegetation on it. I should think there are two or three hundred acres that are not growing much vegetation on account of alkali. The only vegetation growing on the bench lands is sagebrush, with the exception of a little wild grass. The river bottom is practically level and varies in width, and there is usually a rather abrupt rise out of the meadows. The rise in the country north and east of the San Jacinto in the Trout Creek bottoms is probably 20 to 40 feet to another flat or slightly sloping bench covered with sagebrush; that is the land the new ditch serves. The river from the Vineyard ranch to the Upper Middle Stack field, or what is known as the head of the Bird's Nest ditch, is in rather a narrow canyon; not much width to the river bottom. Above the Vineyard ranch the river comes out of a box-canyon. The only crops raised there that I know of are grain and alfalfa. Apparently last year was the first year any grain was threshed; most of the grain has been cut for hay. A very little grain was threshed in 1913. Apparently they made one or perhaps two cuttings of alfalfa; I am not sure of that. They cut alfalfa three times on the Salmon River project. In my opinion the country is too cold for alfalfa on the defendant's lands. The season is too short to cut three crops. This is a mountain valley and the country slopes quite abruptly from the

river bottoms, except in the case of the Trout Creek valley, north and east of San Jacinto; that is a level flat for from two to two and one-half miles away from the river and then becomes hilly and slopes up pretty abruptly again. The river has cut its way through the mountains there and left a deeply incised valley. The mining town of Contact lies on the mountain side in about section 19, and the mountains are probably about eight or nine thousand feet high within three miles of the river.

CROSS EXAMINATION:

I am not a professional graduate in engineering; I took a course in science and mathematics in the Normal School in Pennsylvania. I am a member of the Idaho Engineering Society. I went to the Salmon River project in 1909 as locating engineer, and that summer was appointed Assistant Chief Engineer, in charge of locations and construction. Mr. C. B. Smith was Chief Engineer. I made no observations on the Salmon River in Nevada prior to 1909. As to ascertaining the quantity of land under cultivation I did not depend at all on my own observations. I think about 2.14 acre feet per acre was used in 1912. I think that is more than is absolutely required with the best use of water with proper economy. One and a half acre feet per acre affords a sufficient amount of water for maturing crops in that vicinity. The total amount of water taken out on the lands in 1911 was 22,840 acre feet. Only about fifty acre feet was diverted from the reservoir in 1911 after the irrigation season. The total amount that flowed into the

reservoir during the year 1911 was 85,000 acre feet between the first of January and the first of October. About 60,000 acre feet was diverted and used for irrigation purposes in 1912; in 1913 there was 75,000 acre feet used, there being an available supply of 27,110 acre feet additional in the reservoir. The system was entirely completed for 90,000 acres. After using 103,000 acre feet, in 1914 16,500 acre feet remained at the end of the season. There is a little water flowing in the channel immediately below the dam. When I measured it in 1912 there was about four and a half second feet. There is a gauge in the stream about half a mile below the dam to indicate whether there is more or less flowing. There has been no systematic record kept of it. I have never computed the amount of water that flows there. I think the flow increased to double the amount shown by the measurement I made in 1912. I estimated it at 9 or 10 second feet. In 1911, 1912 and 1913 my assistants reported that 30 second feet was wasting into the Salmon River from another irrigation project, as shown by observations about twenty-five miles below the dam.

Q. Did you ever make any observations which would enable you to determine whether the water flowing below the dam increased or diminished as the level of the water in the reservoir raised or lowered?

THE COURT: What is the purpose of this, Mr. Nebeker?

MR. NEBEKER: To show the wastage of water from this dam.

THE COURT: Do you intend to show that it is wasted?

MR. NEBEKER: Yes.

THE COURT: That is, that it is due to carelessness, to careless construction?

MR. NEBEKER: Yes, I think it will even go to that, perhaps, but at any rate it will be water which we will contend, your Honor, that they must be charged with, and not us, in this system.

THE COURT: I say, do you intend to show that the loss of water which is found in the channel below the dam is due to the faulty construction on the part of the plaintiff company?

MR. NEBEKER: I don't know that we will show that.

THE COURT: Unless you are going to show that, I will not permit you to pursue that line of examination further. It is taking up time for no good purpose that I can see. It is generally well known that there is some seepage and some leakage through almost any diversion dam. Now, if this dam is constructed in a reasonable way, with reasonable care, that is as much as can be required.

Cross Examination (continuing):

The only observations I made on the Hubbard ranch were from riding by it. The areas given in my testimony of land under cultivation do not include the Hubbard ranch. It is south of the Vineyard ranch, up Jake's Creek. I saw ditches and water being used on the Hubbard ranch. In the 2,265 acres is included all of the lands that I ob-

served had been irrigated systematically. That number of acres is all of the land that in 1911 or 1912 produced crops as a result of artificial irrigation. I discovered dams up and down the river which had been used to divert the water out over the land on either side. In the acreage I gave I did not include lands, if there were any such, over which water was flooded by means of dams across the natural channel. The point on the Salmon River commonly known as the Bore's Nest is immediately below the confluence of Shoshone Creek and Salmon River. The measuring station of the official connected with the Geological Survey is about two or three hundred feet down in the canyon. The water enters a sort of a box-canyon at a point just a little above the measuring station. Between the dam and Shoshone Creek the canyon is a mile wide in some places. From the Bore's Nest to the Vineyard ranch is about twenty miles, I guess; it may be a little more than that. The bottom land between those points is on an average about one mile in width, on which is grown wild hay and pasture grass. Between those points I made no examination with the view of determining how many artificial dams were placed in the stream for the purpose of diverting water out over the level bottoms. I confined my observations to artificial ditches. When I speak of irrigation I mean such as took place from these artificial ditches. I do not know how much irrigation has taken place as a result of putting in dams into the streams and spreading out the water in that way. I could not give an idea of the total

acreage upon which existed pasture and hay land from the Vineyard ranch down to the Bore's Nest without counting it up on the map. I did not explore Jake's Creek above the Vineyard ranch. I think that tributary is about 5 miles long. I have seen it by traveling along it up past the Hubbard ranch. I believe that ranch is irrigated from Jake's Creek and its tributaries. I am acquainted with only the lower end of Trout Creek. I do not know personally whether any lands are cultivated or crops grown on Trout Creek some distance back from the river. Perhaps about 10 miles above the Bridge ranch there are other lands irrigated on Shoshone Creek. There is a ranch belonging to the Vineyard Land & Stock Company at the mouth of Big Creek and one on Hot Creek. I did not take the areas of lands irrigated from those sources. I would not say that cereals would not grow on the lands of the defendant company in Nevada. I guess good wheat and oats can be grown there. I think two crops of alfalfa can be grown there.

RE-DIRECT EXAMINATION:

The water in the channel below the dam went up for a time in 1912 and then began to diminish. It went up to about 9 or 10 second feet. It has been gradually going down ever since that, according to the gauge height. Water seems to come out of the canyon walls in the form of springs at numerous places below the dam. There is water coming into the channel from Antelope Springs about three miles below the dam and a great deal of waste water comes

in from the south side Twin Falls canal. There are several old ranches near the mouth of the river and they are using water. The observations I made down on that part of the stream were to determine whether those ranches still had sufficient water. They were there before the dam was built. The total loss from the reservoir by seepage and evaporation in 1911 was 52,070 acre feet; total loss in 1912 was 64,181 acre feet; total loss in 1913 was 46,314 acre feet, and the total loss in 1914 was 38,032 acre feet. The loss in depth per mean submerged area in 1911 was 45 feet; in 1912, $34\frac{1}{2}$ feet; 1913, 23.7 feet; 1914, 19.5 feet. From experience up to date, I think we might deduce that the loss will eventually decrease to about 10 feet in depth on the mean submerged area. This would be about fifteen per cent. of the mean run-off to date. In 1914 the loss in the canal system was twenty-seven and three-tenths per cent. of the amount diverted; in 1913 the loss was thirty-two per cent. I have made deductions in the same way through experience and consider that the loss will reduce to about fifteen per cent. of the amount diverted. The run-off is a great deal less this year than in any other year. It is less than half as much this year than it was last year or previous years during the same period. I should say that the outlook for the present year is for an insufficient supply. If the irrigable area under the system were demanding water and was in cultivation the water supply would be insufficient in the extreme. I am basing my answer on a duty of water of one and a half acre feet per acre. On that basis I don't

think we have ever had a sufficient supply for 90,000 acres. In 1912 the number of users was 296; in 1913, 365; in 1914, 405. Approximately 1,800 contracts have been issued. The first years of irrigation demand more water; the land is dryer and the sagebrush land is in a very dry state. My duties include traveling over the project a great deal; out in the field half of the time at least visiting farms and inspecting the ditches, communicating with the men, handling all kinds of repair work and looking over agricultural conditions, besides the work of receiving reports in the office and summarizing records. I believe I can check up pretty closely on the reports sent to me by the ditch riders. I believe the figures I gave yesterday for the number of acres irrigated in 1911, 1912, 1913 and 1914 are correct. In 1911 we used all the water that was available; in 1912 we carried over for the next year 43,500 acre feet; in 1913 we carried over for the following year 27,500 acre feet; in 1914, 16,500 acre feet. We drew on the reserve of 1912 for two years. In going over the lands of the Vineyard Land & Stock Company I reached the river at convenient points and inspected the conditions. At intermediate points the river is overgrown with willows badly and it is practically impossible to get along. I followed both the river and the road. The examination of my assistant, Mr. Stocking, was more thorough than that. I don't believe I found any dams being used for irrigation purposes. If dams had been there, they had gone out. Those brush and manure dams wash out every

year. I considered everything that looked like a diversion structure at all.

Plaintiffs' Exhibit No. 27 (also offered in evidence) is a photograph of the Vineyard ranch from a point on Jake's Creek looking north. It was taken in 1911. The buildings shown on the photograph are the construction camp on the Vineyard ranch, taken during the construction of the new ditch. At the Vineyard ranch the buildings consist of a log house and corrals. These are all the improvements with the exception of the meadow and the fencing. Plaintiffs' Exhibit No. 28 (also offered in evidence) is a picture of the San Jacinto ranch from a point on the Warm Springs ditch, looking across the alfalfa field, looking northeasterly. It was taken by me in January, 1912. The improvements on the San Jacinto ranch consist of a store building, blacksmith shop, a couple of log buildings, headquarters for the farmers, headquarters for the cowboys, and some new cottages. Plaintiffs' Exhibit No. 29 (also offered in evidence) is a photograph of the Salmon River valley, looking south from the Bore's Nest canyon. It is the north end of the property of the Vineyard Land & Stock Company. The mountains that appear in the distance are a little southeast of the San Jacinto ranch and known as Middle Stack Mountain. The picture was taken by Mr. Horn in 1909 and is a very good presentation of the condition of the country. Plaintiffs' Exhibit No. 30 (also offered in evidence) is a photograph of the Middle Stack Mountain and the abrupt slope out of the val-

ley; taken from the head of the Harrell ditch about four miles south of the San Jacinto buildings. It was taken by me last week. The camera was directed east from the head of the Harrell ditch. The river is at the point where the picture was taken. Besides the improvements on the defendant's lands along the Salmon River I have referred to, there are some log buildings, houses and barns, on what is known as the Bridge ranch. There is a cabin on the Bore's Nest field. There is what is known as the Reed cabin on the Bird's Nest field.

RE-CROSS EXAMINATION:

My conclusion that the amount of evaporation and seepage will diminish as time goes on is based upon experience up to date and my own judgment. It has decreased from 45 feet to 19½ feet in depth on the reservoir. I don't know of any other factors taken into consideration by me. I think the interstices in the rocks are gradually puddling up; the turbidity of the water that is brought down in the spring is closing up the fissures and so on; also that the ground water, the storage of the rock itself, is filled up. I mean the saturation of the rock and soil. I don't think that in the future there will be any less evaporation than at present. I think there is not over five per cent. of the reservoir that is walled in by vertical cliffs; probably fifty per cent. of it is talus from the cliff, more or less filled with soil and vegetable matter, and the balance is sloping ground. The cliffs are lava rock with cleavage lines that are both vertical and horizontal. There are two formations

of lava. I think that water has been escaping through those lines or cleavages to some extent. I think that about ten second feet is all that I know of that escaped from the reservoir through the cleavage lines and then came into the canyon below. I don't think you could say that there is any water flowing directly through the dam; there is a little moisture that appears on the back of the dam. I don't think that the stream of water at the end comes through the dam. I think it comes around through the rock. It is almost at the point of contact of the cement and the country rock. I don't think there is over three or four miners' inches at the present time. There was a little at each end of the dam. The larger stream at the present time is on the east end. I have never made any measurements of evaporation from the reservoir and I haven't any direct data. The total surface of the reservoir in high water in about 3,000 acres. No experiments, to my knowledge, have been made in that vicinity for determining what the evaporation is on surfaces of that kind. The only experiments that I know of are from field tanks at Twin Falls and Gooding, made I think by Mr. Welch, Mr. Bark and Mr. Nelson, representatives of the Agricultural Department. My recollection is that they were taken for a series of months in the summer and there was about 33 inches during the summer months. I can't recall now what period of time they extended over. I think there were all of the atmospheric agencies that cause evaporation, except perhaps the influence of the wind, which is a very im-

portant factor in evaporation. I hardly think it is the most important factor in that section of the country. In a sheltered canyon like Salmon River the wind wouldn't have so much influence as elsewhere. My opinion was that the evaporation loss was about 54 inches per year on the reservoir surface. In arriving at that conclusion I did not make allowances for the action of the wind on account of the depth of the water in the reservoir, which would counteract the influence that the wind would have. The water surface at the maximum capacity reached since the construction of the dam is approximately 2,400 acres.

A. E. ROBINSON, a witness duly called and sworn on behalf of plaintiffs, testified as follows:

I have been engaged in business as a civil engineer for twelve years; the past four years in irrigation engineering; two years as State Engineer of Idaho, with general supervision on behalf of the state of all Carey Act enterprises and a great many other private enterprises. Since 1912 I have been engaged as consulting engineer on irrigation engineering work, for a year and a half of which time I was Receiver of the Murphy Land & Irrigation Company in this state. I have been engaged part of the time as consulting engineer for the Salmon River Settlers' Association, in which connection I have made a good many examinations of this project. During 1911 and 1912 I made frequent trips to the project. In 1912 I was on the project two or three times, I don't remember which. Since that time I have not seen it until the fall of 1914. The use of water by the set-

tlers for a new project has been economical, careful and without unnecessary waste. One and one-half acre feet is a high duty of water and it requires the most careful husbandry. I have made an investigation as to the condition of the canyon and the water coming out of and around the vicinity of the dam. On the four or five trips I made to the dam in 1911 and 1912 and the one in the fall of 1914, I observed a flow in the river below the dam. I was interested because I knew that the reservoir was losing water through the lava rock formation, and we wished to determine whether the water returned to the canyon again after it was lost or whether it went some other place. For a considerable distance below the dam there was practically no return water. About a mile or perhaps about a half a mile below the dam there were little springs in the bed of the river and the water flowing from them increased as we went down the canyon. There is nothing to indicate that the flow from these springs was in any way connected with the water in the reservoir. For some time after the dam was built there were slight evidences of water seeping through the dam in very small quantities, but not sufficient to flow down the surface as far as the bottom of the dam; it would evaporate before it would get that far. At the east end of the dam at the time I made my first visit there was a fissure in the lava rock through which there was a stream of six or eight miners' inches flowing. This was afterwards plugged by a concrete plug placed in the fissure. On the west end of the dam, near the point of

contact between the dam and the canyon wall there was a stream of water which at first glance to a casual observer would appear to be a very serious thing. It carried only four or five miners' inches and was so slight that it was negligible.

CROSS EXAMINATION:

My investigations did not extend more than a mile below the dam, probably not over half a mile. There is quite an accumulation of debris right at the toe of the dam, and extending down the canyon for a distance of perhaps two hundred feet. Below that the water appears. It could be very possible that the water in the canyon seeps through the lava rock and follows its way around through the fissures into the channel below. I have no knowledge of the existence or non-existence of springs at that point before the dam was constructed. There are no natural streams of water in that vicinity. The nearest tributary is about six or eight miles up above. The water in that stream flows only during the spring season. I never measured the water below the dam, nor did I see it measured. In the summer of 1912 was the last time I was at the place below the dam. It appeared to be about the same in 1912 as in 1911. I know of no other reservoir where the formation is similar to this. There would be a considerable quantity of water at first flow through the seams and either come back into the channel or be entirely lost. The rock walls of the canyon about that water line have been drying out for a great many years. Ever since the canyon was formed they have not been wetted. The

cracks which are in lava rock which contain any kind of clay material at all, and there are a great many cracks of that kind in lava walls, have been dried and the clay contents have shrunk, so that with the first application of water there would be a considerable loss through the fissures. When the clay would become thoroughly soaked it would expand and fill the fissures and cause the loss to cease at that point. When the water would recede it would dry out to a slight extent, but not to the same extent as before wetted. Between irrigation seasons in the body of the rock clay would not dry out to the same extent as it would if it had a great many years in which to dry. The natural expectation would be that that reservoir would gradually improve, both from the process of the swelling of the clay in these fissures and from the natural silting and puddling which takes place in all reservoirs. These clay plugs which exist in the fissures I have observed in the tunnel leading from the reservoir. There are very few vertical cracks, but they contain clay too. I can't answer whether the clay is equally distributed, because the lava rock in the tunnel, when you get beyond the surface, is radically different from what it is on the outside. The vertical fissures don't show up in the tunnel. All rocks break up into what is called joint planes, which extend vertically as well as horizontally. The joint planes of lava rock, limestone or any other formation of that character, extend entirely through the beds. The joint planes do not necessarily constitute openings. Generally joint

planes furnish a means for the flow of water only on the surface of the rock. I don't think that the pressure of the water in the dam would have anything to do with the question as to whether those fissures would or would not plug up. At the bottom of the reservoir the pressure would be seventy-five pounds to the square inch, assuming a depth of 200 feet; the pressure is forty-two hundredths of a pound to a foot of depth. I know that some of the joint planes are filled with clay and am not drawing upon my imagination. If the joint planes and seams were not filled with clay, you would find springs of considerable magnitude immediately below the dam, or else within a short distance below. The seams are either not there or else if they are there they are filled or partially filled with clay. I have never made any calculation for the purpose of determining how much of the total loss is made up of seepage and how much by evaporation. The evaporation is generally constant from year to year. I have never formed any conclusion as to the total amount of seepage which takes place in the reservoir, because I have not studied the question from that angle.

RE-DIRECT EXAMINATION:

The tunnels in which I have made observations are the diversion tunnels from the reservoir, about 90 feet above the bottom of the canyon. The first one has a length of about 1200 feet and extends through the canyon walls from the reservoir to a small open cut. The second tunnel is about 300 feet back from the canyon wall. In the tunnels and the open cut be-

tween the tunnels the lava rock was generally solid and firm, and divided into beds. The beds in places showed openings, filled or partially filled with clay, but no vertical openings. The only open joints were between the beds, in which respect the rock in the interior of the tunnels was different from the surface rock. On the surface the natural appearance tends to split the rock along these cleavage joints and give it the appearance of being broken by vertical fissures, but that is not true when you get into the solid material. The construction work of plaintiffs' dam is first class. I have visited the property of the Vineyard Land & Stock Company. I can only describe it as far back as Contact. At Contact the Salmon River flows through a narrow canyon with steep, abrupt sides. The canyon opens up in the vicinity of San Jacinto and forms a basin which extends from San Jacinto down to Shoshone Creek. North of Shoshone Creek the country is very rough and mountainous, consisting of rock lava flows. On the west, east and south the country is also mountainous, and the bottoms of these canyons are narrow mountain meadows. The bottom lands and the lands along the river and creeks are natural hay land, grown up with wild hay and the profuse growth of willows such as is typical of these mountain valleys. The land gives the impression of being swampy. There has been very little improvement of any of the land in that section. The grasses which grow there are natural grasses; no attempt has been made at cultivation or planting, just simply the wild growth which needed

no planting. About the only thing I observed about the Harrell ditch was the character of the construction of it. It attracted my attention on account of the unfinished appearance and the rough spoil banks on the sides of the ditch and the evident haste with which it had been constructed.

RE-CROSS EXAMINATION:

The only visit I ever made to that part of the country between Contact and the upper end of the box-canyon through which the Salmon river flows was in September, 1914. I spent part of one day going over it. It is probably twelve miles—fifteen miles from Shoshone creek to Contact by road. That made a trip that day of thirty miles. We left Hollister in the morning by automobile and made the trip all the way in an automobile, except where we got out and walked. I was not over on the west side where the alfalfa was planted. The vegetation that I saw consisted of natural, wild hay, such as is seen in mountain valleys of that character, and I presume is produced only by irrigation over the surface. The country was not any different from what I expected of the place where natural meadows are irrigated. Hay had been produced and had been cut at that time. The Harrell ditch below the lane appeared to be new construction work, and above the lane it appeared to be an older ditch. Immediately below the lane it was pretty difficult for me to tell whether it was as new as that portion further down.

F. C. HORN, a witness duly called and sworn on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I am a civil engineer and have been engaged in business thirty-four years. I had entire charge of construction of the Salmon River dam between July 1st, 1908, and May 15, 1911. The work was carried on continuously, night and day, except for a period during the winter of 1910 and 1911, when on account of the inclement weather for a short time we ceased all operations. In round figures there is about 149,000 cubic yards in the concrete monolith. The total length of the concrete tunnels is 3,600 feet. The sectional area as I remember it was about 125 square feet.

J. B. STOCKING, a witness called and sworn on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I am a civil engineer and have been engaged as such about ten years. In December, 1911, and January, 1912, I surveyed Shoshone Creek and Salmon River and all the lands watered by the Vineyard Land & Stock Company from Salmon River, Shoshone Creek, Jake's Creek, and San Jacinto. The area of the land of the defendant company that was irrigated is something better than 2,600 acres; 2,265 acres from Salmon River; 160 acres from Shoshone Creek, and 142 acres from Jake's Creek. There was about 414 acres of wild hay irrigated along the north end of the Salmon in section 2, 46, 64; I think a little of it in sections 2, 11 and 35. This is low lying land along the river. The river flows on both sides of it and it is covered with willows and wild grass.

I never found any irrigating ditches on it. There is an area of 1,174 acres south of this wild land in sections 11 and 23, and a little in 26, township 46 north, range 64 east. This is grown up with sagebrush and wild rye grass and willows and has never been irrigated. There is forty acres on the north in section 11, 44, 63, and forty-three acres on the west up towards the head of the old Vineyard ditch; that is in sagebrush. The other forty that I mentioned in the Vineyard ranch is in sagebrush and rabbit-brush and a little bit of rye grass.

CROSS EXAMINATION:

Without looking through it I did not take it for granted that there had been no irrigation where I saw sagebrush and rabbit-brush. I saw some toward the Upper Middle Stack that was doubtful, and I classed it as irrigated because there was a little wild grass growing down by the edge of the river. I didn't see any large areas upon which there was brush of that character that I would call irrigated. There was a little under the Harrell ditch, but I saw no signs of it being irrigated. With the exception that I have mentioned I have classed all lands on which I saw sagebrush or rabbit-brush as not irrigated, but I would say that on this map, Exhibit No. 11, there is considerable of that land that I did not believe had been irrigated. I made an actual survey of the lands that had been flooded from irrigation ditches. I had two assistants, besides a driver, and spent about five weeks in December and January. I was never there when the water was being used

for irrigation purposes. I formed my conclusions that the lands that did not come under some ditch were not irrigated and I also made inquiries from people whom I knew whether or not water had been used. Wherever I found any evidence of dams I included the land as being irrigated that way. I found a brush dam at the head of the Fisher ditch; one at the head of the Harrell ditch and one at the head of the San Jacinto ditch. I saw no dams except these. I did not include any lands as irrigable where I saw no dams or old ditches. I included all meadow lands and all the pastures that could only grow as a result of irrigation. I am prepared to say that the total irrigation from Salmon River is 2,265 acres. This does not include the Hubbard ranch, nor the lands irrigated from Jake's Creek. I have never seen any irrigation of these lands by means of temporary dams put across the natural channels and sloughs and swales that extend therefrom. A few days ago I was there when they were irrigating on the west side of the river. That was the only time I have been there when they were irrigating.

RE-DIRECT EXAMINATION:

There was very little snow on the ground when I was there and that was only in places, so there was no trouble in seeing the ground.

RE-CROSS EXAMINATION:

There was no grass growing, but you could see where it had been. I would say the country had been pastured; cattle had been turned out; they were also feeding hay. The cattle were wandering around along the river and through the fields.

It was thereupon stipulated that the lands on the Salmon River project were thrown open for entry June 1st, 1908, and that entries in excess of 50,000 acres were made at that time.

PLAINTIFFS REST.

Defendants thereupon introduced Defendants' Exhibit No. 1, and it was stipulated and agreed that the areas included within the red lines on the exhibit, subject to later attack on examination of defendant's abstracts, were and are the lands of the defendant, and that the water shed between Salmon River and Goose Creek was located approximately as shown by the blue lines on said exhibit.

Defendant offered in evidence Defendant's Exhibit No. 2, and Defendant's Exhibit No. 3.

Plaintiffs objected to the introduction of each of said exhibits on the ground that there did not appear to be any statute in the State of Nevada, or any law, under which such notices could be filed, and that no right to the use of the waters of Salmon River or its tributaries could be obtained by the filing of the notices or documents offered as exhibits 2 and 3.

Sections 425-428, Compiled Laws of Nevada for the years 1861-1900, were read to the Court.

The exhibits were received in evidence by the Court for the sole purpose of showing an affirmative act in the way of initiating water rights at the date of the respective exhibits, in the same way that any other fact, as the making of a survey, might be taken as evidence of intention to appropriate water at that time, but said exhibits were not to be received for

any other purpose or to be regarded as having any other legal effect.

E. C. McCLELLAN, called and duly sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I am fifty-seven years of age. I have resided at Elko, Nevada, continuously since 1886. My work has been mostly in northeastern Nevada, some in Idaho, Utah, California and New Mexico. I became familiar with the methods of irrigation in northeastern Nevada and in Nevada generally. Wherever there is water to irrigate the methods are similar throughout the state. My first work in connection with the defendant's lands in Elko County, Nevada, along the Salmon River, consisted of selecting the lands for Jasper Harrell. I commenced in 1881, and from that time for a greater part of a number of years since then I have done more or less work in the valley. I have been familiar with the San Jacinto and Bridge ranches since 1880. I have been on the Vineyard ranch twenty years out of the number since 1880, several times a year. I am familiar with all of the ranches in that section, or what is called the old Sparks-Harrell range. These ranches formerly belonged to the Sparks-Harrell Company. When I first went into that part of the country there were no surveys. There were only possessory or squatters' titles. I went there in 1880 to sectionize the country under Government contract. I sectionized it, commencing in Salmon River valley at the summit of the divide between Thousand Springs and Salmon River,

and extended north to the state line. I am not very well acquainted with the tributaries of the Salmon River west of the Sparks-Harrell range. I have been over there a few times, but not to make any surveys. The Salmon River proper commences where the principal streams come together, perhaps ten miles northwesterly from the Vineyard ranch, and the length of the valley itself would be in the neighborhood of thirty-five miles. The principal tributaries commencing on the north and east are Shoshone Creek, Cow Creek, Trout Creek, Nall Creek, Dry Creek and Jake's Creek. Above this range the only ones I have the names of are Sun Creek, Canyon Creek, Cottonwood Creek and North Fork. There are others, but I don't know their names. These tributaries all come into the Salmon River south of the state line. I first went over there for Jasper Harrell and selected land on the Vineyard ranch and down into the valley now called San Jacinto. I selected nearly 4,000 acres at that time. Jasper Harrell was succeeded by Sparks & Tinnin, a partnership, in the fall of 1883. By 1883 about 3,200 acres had passed into private ownership. Sparks & Tinnin transferred the lands to the Sparks-Harrell Company, who held them up to the time of the acquisition of title by the defendant. In 1883, 1884, 1885 and 1886 I selected land for the Sparks-Harrell Company, surveying all over Salmon River valley and on Goose Creek and on Thousand Springs Creek. I think I selected every acre, with the exception of eighty acres on Big Goose Creek. I would rather not try to state the total acreage owned

by the Sparks-Harrell Company, but I think it would run up into the neighborhood of 50,000 acres.

My first observations or work in connection with irrigation matters in that vicinity began in 1886. It consisted principally in seeing that the water was turned out into the river valley in the spring, and in the fall I laid out and had constructed the upper Warm Springs ditch. I commenced again in 1893 and for a few years after that I was employed in laying out ditch lines and canal systems all over their range.

Two maps were thereupon marked for identification as Defendant's Exhibits No. 4 and No. 5.

Mr. McClelland (continuing) :

I made the map marked for identification as Defendant's Exhibit No. 4, from a survey made by me in 1889. The lines on the exhibit are correctly placed from the survey and notes made by me at that time. Defendant's Exhibit No. 4 represents the Vineyard ranch. The blue line extending across in a half circle along the upper side of the colored lands was the Salmon River channel at that time. It is marked "Salmon River." Everything within the black lines around the quarter-section points is the lands that were owned by the Sparks & Tinnin Company at that time. This line extends entirely around the area that is shaded or colored in ink, with the exception of a small area in the northwest quarter of the north-east quarter of section 16. This was outside of lands owned by them at that time. Prior to 1889 my partner, Col. Munroe, located some ditches. In 1889 there

were ditches on the Vineyard ranch as shown by Defendant's Exhibit No. 4. There were two ditches taken out from Jake's Creek, one on either side. The one on the east side forked just above the field, one fork extending not quite due east, and the other in an east and north direction across the field. The one on the west side was taken out and extended in a northwesterly direction on the west side of the bottom land. Those two irrigated the lands shaded dark between that and the Harrell ditch, which was taken out of Salmon River in the southeast quarter of the southwest quarter of section 9, township 44 north, range 63 east, and extended in a southeasterly and then an easterly direction across the shaded lands. There were two smaller ditches on Jake's Creek that extended easterly and there was a newer one connecting with the Harrell ditch that had been taken out to carry the water a little bit higher up and out of the old ditch line. The Harrell ditch is marked "Harrell Ditch" and is indicated on Defendant's Exhibit No. 4 by a heavy black line extending across the dark area. In addition to the Harrell ditch there are two ditches marked with the figure one, and on the west side with the figure two, and one taken out from No. 1 on Jake's Creek is marked No. 3. Two other ditches taken out of Jake's Creek are marked No. 4 and No. 5. The newer ditch higher up than the Harrell ditch is marked No. 3 also. These numbers give about the consecutive times, as near as I could find out, at which the ditches were taken out. Jake's Creek on Defendant's Exhibit 4 is marked "Jake's

Creek" and is indicated by a blue line extending from the south side of the map and joining Salmon River in the south side of section 10. The scale of defendant's Exhibit No. 4 is 16 chains to the inch, and the top of the map is north. The shaded area in ink indicates the land which was under irrigation in 1889. It is a correct representation of the irrigated lands at that time. It includes 814.4 acres. The tract was entirely enclosed by fence in 1889. The crops that were produced up to 1889 consisted of natural grasses. On the east side of Jake's Creek it was rye grass principally; on the west side it was finer, almost marsh grass, showing heavier irrigation than on the east. The property at that time was used in connection with the stock-raising business, and in going over the ranch and seeing the stock I believe there was over 40,000 head. Up to that time grasses were principally made use of for pasture for their beef cattle. There were two or three hundred tons of hay at the Vineyard. The hay was cut off of the best of it and the balance was left for pasture. Defendant's Exhibit No. 4 was thereupon offered and received in evidence.

Mr. McClelland (continuing) :

Defendant's Exhibit No. 5 covers the territory from what is called the Bird's Nest to the Bore's Nest canyon and Shoshone Creek. The Bird's Nest is northeast of the Vineyard ranch down the river. There was no irrigated land in 1889 between the Vineyard ranch and the point on Exhibit No. 5 called the Bird's Nest. It is about 12½ miles in an air-

line from the point marked "Bird's Nest" to the point marked "Bore's Nest." I made Defendant's Exhibit No. 5 from surveys made in October, 1889. The location of Salmon River is represented by a heavy blue crooked line, extending from the southwest corner toward the northeast corner. Part of Shoshone Creek is shown by a lighter blue line extending from the northwest side of section 24, 47-64, down southeasterly in section 23, where it joins the Salmon River. Trout Creek is located on the exhibit pretty near the line between townships 46 and 47 north, range 64 east, by a lighter blue line, and is marked "Trout Creek." There are a few small streams that flow into the valley between the Bird's Nest and Bore's Nest that are not marked on the map. In 1889 the Sparks-Harrell Company owned all of the land included within the heavy dark ruled line along the forty-acre lines extending on the east and west sides of the valley. In 1886 I made observations to determine whether the river bottom was being reasonably well irrigated. I am familiar with the land that was under irrigation in 1889 between the Bird's Nest and the Bore's Nest and I have indicated the area on Defendant's Exhibit No. 5 in the shaded part of the map, extending along the edge on each side of the river. Up to 1889 between the Bird's Nest and the Bore's Nest there were 4,178.4 acres under irrigation. There are no ditches or sloughs or dams on Defendant's Exhibit No. 5 that were not on the ground in 1889 and prior thereto. At the upper part of the southwest corner of the map, in the northwest

quarter of section 21, there was a dam in the river marked "Dam A." This threw water out upon both sides of the river, but it was principally taken out by a ditch extending north 200 yards or more into a slough, marked on the map "Bird's Nest Slough." About half a mile lower down the slough a dam was put in and two ditches taken out for a short distance. They are marked "Bird's Nest Slough C" and "Roland Ditch No. 1." Still further down the slough near the center of section 16, it branched into two branches, marked "A" and "B." There was a dam in the river in the northwest quarter of the southeast quarter of section 16, 45-64, and a ditch extending a little west and northerly at the forking of these two sloughs A and B. I am describing the conditions that existed in 1889. These two dams in the main river, with the sloughs, irrigated the lands in sections 21, 16 and part of 9. The dam marked "C" in the northeast quarter of the northeast quarter of section 9, diverted the water and threw it out upon both sides of the river. On the east side it went into what is called the Roland East Side Slough, and on the west side it was diverted into what is called the Middle Stack West Side Slough. Still further down in the northeast quarter of the southeast quarter of section 4, a dam marked the "Hank Roll Dam B" diverted the water into a ditch extending about an eighth of a mile westerly, from which it flowed into the Middle Stack West Side Slough. The land between the slough and the river was irrigated by the dam here extending from this slough and was then diverted

by a smaller dam. At the point marked with a cross, where the water didn't naturally flow over each way, a manure and willow dam was placed in the slough to spread the water out. It is the old fashioned method of irrigation. There was a dam near the center of section 23, 46 north, 64 east, marked on this map Mitchell Dam E, which diverted the water and threw it into what is called the Mitchell Slough. That extends along the east side of the bottom from that point to a point in section 55, township 47 north, range 64 north. Below this Mitchell Dam E about a quarter of a mile is another dam called the Hank Roll slough dam F, which diverted the water into the Warm Springs Middle Slough that extended between the main river and the Mitchell Slough. About a mile further down the river at a point about a quarter of a mile south of the section corner between sections 11 and 14, 46 north, 64 east, was the Fisher Dam G, and there was a combination of ditch and slough called Gray's ditch No. 1, which carried the water down in the northeast quarter of the southeast quarter of section 35, 47 north, 64 east. A mile and a quarter further down the stream at the north side of section 11 was Gray's Dam H, and a ditch extending northeast about an eighth of a mile. The Mitchell Slough extending along the east side of what is called the island, the Warm Springs Middle Slough, and Gray's Dam H were used in irrigating the lands on what is called the island. In the northeast quarter of the southeast quarter of section 35, at a point where a branch of the Mitchell Slough ran into the

river, a dam was placed and continued down into the Bore's Nest East Side Slough. The vegetation grown on these lands in 1889 was natural grass that grows in this country. It was used partly to cut hay on and parts of it for pasture. There is very little difference between the elevation of the lands shown by the dark shading and the river bed. In some points the Salmon River itself is higher than the land on the sides. I am familiar with that character of irrigation at other places in Nevada. It is the method carried on almost entirely on stock ranches. I was in the valley and on these ranches in 1893, laying out ditches for the Sparks-Harrell Company. I did some work out on Trout Creek meadows before I left the valley. The first work I did in the valley was to extend what is known as the Warm Springs ditch about a quarter or half a mile further. I was there about a month laying out ditches on the Salmon River and Shoshone Creek. I was there the next April, but in the Salmon River valley I was there only a few weeks. I was up in the mountains laying out ditches on the tributaries of the Salmon River. In April, 1895, I was there laying out ditches and assisting in the irrigation. I assisted in putting in a new dam below what is called the Fisher dam and taking out a ditch there. Ditch construction commenced on the river in 1893. The shaded portions of Plaintiffs' Exhibit 5 were all under fence in 1889.

Thereupon Defendant's Exhibit No. 5 was introduced in evidence.

Mr. McClelland (continuing) :

Defendant's Exhibit No. 6 is a map made under my supervision and the markings thereon are substantially correct. I believe that all of the ditches constructed on the San Jacinto ranch between 1889 and 1895 appear on Defendant's Exhibit No. 6. The heavy blue line extending from the southeast corner of the map to the westerly side, and ending at what is marked "High Cliffs" in the southeast corner of section 23, 47 north, 64 east, represents approximately the location of the Salmon River. Shoshone Creek and Trout Creek also appear on the map. The shaded blue lines extending along the quarter-section lines on the east, west and north sides of the lands covering Shoshone Creek and Salmon River, represent the lands that now belong to the defendant company. Between 1889 and 1904 the first work done on ditch construction on the east side of the river was in the northeast quarter of section 9, called the head of the Harrell ditch, and running from the river into the Roland East Side Slough. Below this ditch there was a dam put in and a small ditch lateral taken out upon the east side, extending perhaps half a mile, to the east of the slough. A half mile below that was another dam and a ditch was taken out that extended from the southwest corner of section 34, of 46, 64, almost due northeast to near the northeast corner of section 34, a distance of about a mile and a quarter or a mile and a half. That ditch may be about 8 feet wide and a foot deep. The next construction was the Harrell ditch, taken out from the Roland East Side

Slough in the northwest quarter of section 34. It was 16 feet wide on top and eight feet wide on the bottom and four feet deep. For about a quarter of a mile it had a fall of about four feet, and after that it was reduced to two feet, or in that neighborhood. It extended along the east side of the bottom and up to 1904 had been carried about three miles in length, to a point opposite the San Jacinto lane, and for another quarter of a mile was partly constructed. Further down and on the south side of section 23, 46 north, 64 east, a ditch was taken out from a spring and it tended to collect water which was used in irrigation under this Harrell ditch. It extended parallel with the Harrell ditch about three-quarters of a mile. It was six feet wide and about eight inches deep. Just below this and near the center of section 23, there was a cut taken out from the river, called the Moore cut, that diverted water into the Mitchell Slough. This was about an eighth of a mile long, about five feet deep at the head and some twenty feet wide on top. From this cut a headgate and ditch was taken out extending between the slough and the river in a northerly direction. About the first ten chains of the ditch was constructed and then dropped into a slough which was cleaned out and enlarged for a distance of perhaps ten chains further, or less; then the ditch was extended from that slough in a northeasterly direction first, then in a general northerly direction, following the highest part of the ground between the Middle Warm Springs Slough and the Mitchell Slough, ending just below the San

Jacinto lane. That is called the Rainwater ditch and is so marked on the map. In 1904 there was a little work done on what was called on the other map the Hank Role dam, to get the water out from the Warm Springs Middle Slough. Following down the river on the east side the next work that was done was at the Gray dam. A ditch was taken out just north of the section line of section 2, 46 north, 64 east, and was extended in a northeasterly direction about 10 chains into a slough extending northerly, which was cleaned out. Another ditch was taken out from a slough that might be called the Warm Springs Middle Slough. It was carried around in a northwesterly direction and dropped into this other ditch, by which means water was diverted from Mitchell Slough and Warm Springs Middle Slough, and also from the river, and carried upon the higher ground that lay along the east side of section 2, upon what was called the Harrell. Further down in the southeast quarter of section 25, 47 north, 64 east, a ditch was constructed about ten feet wide on top and one and a half feet deep; it extended along the east side of section 35 and the east side of section 26, into the southeast quarter of section 23, 47 north, 64 east. This is called and referred to on defendant's Exhibit 6 as the Bore's Nest East Side ditch. It was about two miles and a half in length in a straight line. The only other ditch construction on the east side was a lateral ditch under the Harrell ditch that was extended right along next to the Harrell ditch underneath it for the purpose of drawing the water out to irrigate the lands

lying underneath it and south of the San Jacinto lane. It extended from a point about eight chains north of the upper end of the old Harrell ditch to a point opposite the San Jacinto lane, and was located about ten to twenty feet away from the Harrell ditch. It was about four feet wide on the bottom and a foot deep. That is all the ditch construction I can recall that took place on the east side between 1889 and 1904. In 1893 I laid out a ditch line on the Bridge ranch commencing in the southeast quarter of the southwest quarter of section 17, on the north side of the creek, extending in a general northwesterly direction to the center of section 18, then more northwesterly to the west side of section 18, then in a southwesterly direction across the center of section 13, 47 north, 64 east. I am not positive that it was constructed the full distance as laid out, but construction was started in 1894 and it has been constructed across the road leading from the Bridge ranch to the Point ranch and into Idaho. I don't know how much further it has been constructed. Up to the road crossing it is a little over two miles in length. It is about 16 feet wide on top and three feet deep, and has about four feet fall to the mile. The only other construction prior to 1904 on the Bridge ranch was a dam placed in the main ditch at the east side of the southwest quarter of section 18, 47 north, 64 east, that diverted the water and threw it into a slough that extended along the south side of the Shoshone bottom. I should say that there is under fence on the Bridge ranch from 250 to 275 acres.

Oats and wheat were grown on part of it, natural grass on the bottom lands. I think there is some alfalfa there at present. On the west side of Salmon River, commencing at the Roland Slough at the north side of the northwest quarter of the northwest quarter of section 21, 45 north, 64 east, there is what is called, but not marked on Defendant's Exhibit No. -6, the Bird's Nest ditch that extends along the west side of the bottom. In 1904 it was fully completed to the northwest quarter of the northwest quarter of section 7, same township and range. It had been partially constructed about another mile further, but was not completed at the time when I left. This ditch was 20 feet wide, four feet deep and down towards the lower end of the constructed part was about 16 feet wide and two or three feet deep, I think. Continuing down the river the next ditch construction was in the southwest quarter of the northeast quarter of section 27, 46 north, 64 east. It is what is known as the Middle San Jacinto ditch, starting from the river and extending in a northerly direction, and it first crosses what is known as the Warm Springs wash and extends below the Upper Warm Springs ditch and parallel with it. The next I knew anything about it it was constructed to the northwest corner of section 14, to the fence line. That was prior to 1904. That ditch was about four miles long; about 14 feet wide on top and two feet deep. Then there was taken out of the Warm Springs channel itself a ditch called the Warm Springs Lower ditch, nearly half a mile below the Warm Springs Upper ditch and run-

ning parallel to it. It extended down to a point just west of the San Jacinto house; then it was brought across the road to a point closer to the house and ran along the lane northerly from that point. It was about a mile and a half long; 10 feet wide and a foot and a half deep. That is all the ditch construction that I can remember of prior to 1904. I have referred to the Upper Warm Springs ditch and the Lower and Middle Warm Springs ditches, coming out from the river. I made the survey of all of these ditches with the exception of the first start of the Harrell ditch. In 1895 I placed a dam in the river and had a ditch constructed out about 10 chains northwesterly, extending into the Gray ditch No. 1 to take the place of the Fisher dam. I believe all these ditches are correctly located on Defendant's Exhibit 6. I did not make the survey, but from my knowledge of the ground, from general conditions, I believe the ditches are correctly located. I located the Harrell ditch starting from the Roland East Side Slough in the northwest quarter of section 34. The present location was made in 1892, before I went onto the ranch, and they started from the northeast quarter of section 9. I have been informed that a ditch had been located prior to the time I located the Harrell ditch and I saw stakes along what I supposed was a ditch line. I afterwards ran a line for the Harrell ditch throughout its entire proposed course. I did this in September, 1897. It is indicated on Defendant's Exhibit 6 by a blue line marked "Highline Canal," in several places. That is the ditch that was

constructed entirely down to the San Jacinto lane and perhaps a little below it in 1904, but the part below was only one or two plow furrows deep for perhaps one-eighth of a mile. Construction commenced immediately after I located it. I made out a notice of appropriation of water to be filed to cover all years after that. Pages 11, 12, 13, 14, 15 and 16 of Defendant's Exhibit No. 2 are a copy of the location notices which I made out to cover the water for that ditch, and I believe I filed it myself, but am not sure. The Harrell ditch as originally constructed between the upper end of it and a short distance below the San Jacinto lane was 16 feet wide on top, 8 feet wide on the bottom and four feet deep. It covered lands owned at that time by the Sparks-Harrell Company. The lands that would have been covered if the Harrell ditch had been completed on my survey line are described in full in the notice of location which I have just identified. They are northeast of the northeast of 9, east half of the southeast of 4, west half of the southwest of 3, the northwest of 3, township 45 north, range 64 east; southeast of southeast of 33, southwest quarter of 34, east half of northwest quarter of 34, northwest quarter of northeast quarter of 34, east half of 27, northwest quarter of 26, south half of southwest quarter of 23, northeast of southwest of 23, east half of northwest of 23, east half of 23, northwest quarter of 24, west half of 13, northeast quarter of 13, east half of 14, all of 12, the east half of 11, of 46, 64; all of 1, east half of 2, west half of northwest quarter of 7, 46, 65; west half of 6,

northeast quarter of the southeast, northwest of the southeast quarter of 6, in 46, 65; east half of 35, all of 36, all of 25, east half of 26, southeast quarter of 23, all of 24, of 47, 64; southwest quarter of 19, south half of southeast quarter of 19; southwest of northwest of 19, north half of 30, northwest quarter of southeast quarter of 30, southwest quarter of 30, the west half of 31, in township 47 north, range 65 east.

In the fall of 1893 I made surveys for ditch construction on the Trout Creek bottoms. These are not shown on Defendant's Exhibit 6. They are about 12 or 14 miles up the creek. Defendant's Exhibit No. 7 shows the Trout Creek meadows. There were two ditches leading out, laid out by me, and a plow furrow run to mark them, and the heads of the ditches constructed for a short distance, perhaps 100 feet, but the balance of the ditch was constructed afterwards and I haven't seen it. I filed a notice of appropriation of water at the time I laid out those ditches. Defendant's Exhibit No. 8 is the notice of appropriation of water filed by me to cover the surveys in that year on Trout Creek. It is in my handwriting. The lines of one of the ditches appears on Defendant's Exhibit No. 7. There are two ditches in this notice of location. I commenced the survey at Trout Creek in the southeast quarter of the northeast quarter of section 3, and extended it in a general northerly direction across the east half of the northeast quarter of section 3 and the east half of the southeast quarter of section 4. The lower terminus

was in the east side of the northeast quarter of the southeast quarter of section 34, 45 north, 65 east. During the years that I was connected with the Sparks-Harrell property it was the practice in the spring of the year for the cow outfit to turn the water out of the streams by means of dams and ditches on the land. After that generally one man would be left to a ranch to see that the water was spreading over the land and kept running until haying time. On the San Jacinto fields after about 1890 there was a crew of men, called a ditching crew, which would be organized under the control of one man as manager, in the early spring, and it was their duty to turn the water out. They did this on or before the first day of April of each year, and until haying time most of the time would be spent in seeing that the water was kept on the land. After the first diversion and placing it upon the ground it would be left for a couple of men to look after and they would then go out and do ditching on the range in different parts, building fence lines, hauling down wood and almost anything that was required for ranch work. In those years it was about 70 miles to railroad, at Wells. Afterwards there was a railroad about 30 miles from San Jacinto, at Rogerson, Idaho. This is the nearest railroad point now.

I have made a study and become informed as to the quantity of water, or what you might say the duty of water is for irrigation of the character I have spoken of, that is the flooding of lands, at these various ranches. The duty of water is very small,

because there is a large quantity of water placed on the land and under those conditions the evaporation is very great. The growing plants there take up double or more as much water as if they were irrigated in a different way, and then there would be quite a large quantity of water either flow back into the streams on the surface or come back underneath. I have an opinion as to about the amount of water per acre that would be consumed either by evaporation or taken up by plant life in that form of irrigation. It is from four to five—

THE COURT: Just a moment. Unless the witness has some experience, of course it won't help me any.

Mr. McClellan (continuing):

I have studied the matter of the duty of water for forty-five years, in connection with the character of irrigation carried on in Nevada. I have observed it a very little in connection with the growing of alfalfa. My observations have been confined mainly to the method of irrigating used by the ranches in Nevada, in flooding the lands, putting the water onto it in the early spring and letting it run until haying time.

Q. And for wild grasses of that character, what class of irrigation, if you know, is necessary?

A. The method that is being used—

THE COURT: Just a moment. It is a question whether this witness knows anything more about this than the Court. If he does, I shall be very glad to have his opinion; if he does not, I don't care to have the time taken.

Mr. McClellan (continuing) :

I have had experience in irrigating and supervising the irrigation of such lands. It has extended at different times since 1886, principally over the Sparks-Harrell range. I have observed from season to season the character of irrigation that was necessary to produce those crops, and have noted the effect of the flooding system upon the crops there and at other places as well. With the crops that are raised on that land, as the condition of the plants is there, they have got to be irrigated in that way to produce anything at all. The irrigation extends from on or before the first of April to between the 1st and 10th of July.

Q. You have spoken of there being considerable evaporation in connection with irrigation of that character. I wish you would explain why that takes place.

THE COURT: And how you know, Mr. McClellan, if you do know, how you know whether there is much or little evaporation.

Mr. McClellan (continuing) :

My knowledge of evaporation is derived from reports of the United States Weather Service taken in the arid regions. There is a table that has been published of evaporations of a large number of different places in the arid regions by the United States Service in 1887 and 1888, I believe it was. Those tables can be secured from the Government, and they are also published. There is one place in Nevada, at Winnemucca, where the evaporation was observed,

that I believe comes about as near the climatic conditions to Salmon River as any of the others, if not nearer.

Q. Do you know what the evaporation is there?

A. That year, yes.

Q. At Winnemucca?

THE COURT: Why is that important? I don't quite understand how evaporation enters into this question now, unless you are rebutting testimony brought out—

MR. NEBEKER: No, I am not rebutting it. Our theory is this, that I don't know just what particular turn this case will take, but it may become necessary for us to show that we have established a right to the use of a large quantity of water which we would be entitled to, even although our system of irrigation in the past has not been the most economical, and now we propose to use a system of irrigation and bring a somewhat larger area of land under cultivation, which would result after all in less loss to anybody else lower down the stream than our former system of irrigation. That is the point.

THE COURT: I don't quite understand yet how evaporation would have anything to do with it. You mean evaporation from the surface of the stream or evaporation from the soil saturated with water?

MR. NEBEKER: Evaporation from the surface of the water that is used for irrigation under a past system, that is, a system by which the entire area was kept under water for some months of the year. That furnished a surface from which there was a

very high evaporation. I say it may become necessary for the Court to determine whether or not we should be permitted to use that same water, which would otherwise be lost under our old system of irrigation, apply it to a use where the evaporation would not be so great and by a method which would consume less water by evaporation.

MR. HAGA: Does counsel claim that evaporation is a beneficial use?

MR. NEBEKER: It is a necessary incident to irrigation to which we are entitled.

THE COURT: That is true, that the loss by evaporation should always be considered in determining the amount of water which is required for the reasonable irrigation of any tract of land, that would be the evaporation of water in the distributing ditches and reservoirs, if there be a reservoir, and also the evaporation from the soil; but perhaps I can't anticipate what you are getting at here, the way the question is put. You ask for evaporation generally. Now, if this witness knows anything about the amount of evaporation there, it may or may not be material.

MR. NEBEKER: I think it will appear to be material, in connection with the testimony that will be offered later on.

THE COURT: Of course, in a case of this kind the evidence takes such a wide range anyway that I don't care to open the door to immaterial testimony or incompetent testimony.

(Last question read.)

MR. HAGA: The question is objected to as irrelevant and immaterial, and as not a basis of determining the amount of water applied to a beneficial use.

THE COURT: This question is as to the evaporation at Winnemucca?

MR. NEBEKER: Where the conditions are the same.

THE COURT: The same as what?

MR. NEBEKER: The same as at Salmon River, where the irrigation takes place.

THE COURT: Perhaps I can get at this more quickly by asking the witness myself.

THE COURT:

Q. What do you mean by conditions at Winnemucca?

A. The general climatic conditions.

Q. Do you know anything about the conditions under which the experimentation was carried on?

A. Just as it is described in the pamphlet of the Government.

Q. Have you the pamphlet?

A. No, sir.

THE COURT: The objection will be sustained to that particular question then, because it seems that all he knows about it is what he has read in this pamphlet, and he should have the pamphlet.

Mr. McClellan (continuing):

At the time I made the location of the ditch for the Bridge ranch I filed a notice of appropriation of water with the County Recorder of Elko County, Nevada. Defendant's Exhibit No. 9 is that notice.

It was filed for the company. It was a notice of appropriation of water to be carried through the ditches that I surveyed at that time. The north ditch was afterwards constructed; the other one was simply constructed so far as putting in a dam and a very short ditch to throw the water from the creek into a slough extending along the south side of the bottom. I should judge that Defendant's Exhibit 1 shows in the colored portions all of the lands at the San Jacinto ranch, the Hubbard ranch and the Vineyard ranch that are owned by the defendant company. The watershed commences at the Idaho-Nevada state line in the west half of section 6, 47 north, 68 east, running in a general southerly direction a little west; about six miles, to the south side of township 47 north in range 67 east, between sections 35 and 35; thence southwesterly to the south side of township 46 north, range 66 east, about the center of section 35; thence in a west of south line to the west side of township 44 north, range 66 east, about the center of section 18, thence curving around to the west and south one mile east of the township corner between townships 42 and 43 north, ranges 64 and 65 east; thence extending in a southwesterly direction to the west line of township 41 north, range 63 east, about the corner to sections 7 and 18; thence curving off to the south side of section 6 of township 41 north, range 62 east.

The line I have described is marked with a blue line, and it locates in a general way the water basin of the tributaries in the east side of the Salmon River. The watershed on the west side of the river extends outside of the map.

MR. NEBEKER: We also offer Defendant's Exhibit No. 8, being the original water and ditch location notice, together with the endorsement on the back thereof, showing the date and place of filing.

MR. HAGA: The same objection.

MR. NEBEKER: The defendant offers Exhibit No. 9, being water and ditch location notice, the original, together with the endorsement on the back showing the place and date of recordation.

MR. HAGA: The same objection, if the Court please.

The Court received in evidence said exhibits 8 and 9 for the same purpose as that to which the Court limited Defendant's Exhibits 2 and 3.

CROSS EXAMINATION OF WITNESS E. C. McCLELLAN:

I did not go over all of the ranches on the Salmon River when I saw them in 1880. I crossed the valley on section lines generally, from the Bird's Nest to the Bridge ranch, making the survey for the Government. The ranches were partly occupied at that time. There was no fencing except at the Bird's Nest. There was a cabin at the Bore's Nest and the Roland house at the Bird's Nest. There wasn't anything at the San Jacinto ranch at that time. There was a log cabin and corrals at the Vineyard ranch and the place was fenced practically as it is today. The improvements were very near the same then as now, with the exception of what is called the Upper Vineyard ditch, which has been constructed since that time. At the Vineyard place the bottom was covered

with grass, rye grass showed up the best, and covered practically all of the field, except the lower bottom lands next to the river and Jake's Creek, where there were other kinds of natural grasses, more like water grass. At the Bird's Nest there was considerable meadow land on the Roland ranch. There was a willow fence extending from the Bird's Nest bluff in a northerly direction alongside of the road connecting with the river on the west side of the field. The river formed a fence on the east side of the tract of land that was under irrigation. There was a cabin at the Middle Stack field. The meadow lands had been cut, and the hay was at that time stacked up not far from the house. As far as I can remember there was no hay cut from there until you get below the San Jacinto ranch. My recollection is that there was some hay cut above and below the Bore's Nest house shown on Defendant's Exhibit 5, on both sides of the river. The house was a log cabin with a dirt roof. Some of these bottom lands were originally natural meadows. Jasper Harrell seemed to be the one who was making use of the hay at that time, and from all that I could hear he seemed to be the sole claimant of all the lands along the river from the Vineyard to the Bore's Nest. When I stated yesterday that there were as many as 40,000 cattle on the ranches I meant on the Salmon River ranch alone. That would cover the watershed as shown by the blue line on Defendant's Exhibit 1, and extending from there the range at that time went west about 30 miles further and extended north into Idaho clear

to Snake River. The estimate of cattle I made from what I saw from 1880 to 1886 or 1887. I don't believe there is anywhere near that number of cattle on the whole range today. I came back into the valley for about one week in 1881 for Jasper Harrell. I made the selections along the Salmon River at that time. All together I selected all of the lands colored in red on Defendant's Exhibit No. 1. The basis of selection was the value of the land for stock-raising purposes and partly for what might be the future value for agricultural lands. The first selections covered the streams and springs alone. Later on, selections were carried away from the streams, covering lands that might be irrigated by taking water from the streams and carrying it onto the land. I made selections continuously in 1883, '84, '85 and '86, 1894 and '95, and I think about 1896. The last selection made by me was in filling out and making a continuous large body of land that might be fenced or irrigated in the future. The rye grass that is cut for hay grows from two feet and a half to six and even eight feet high in fine growth. The bottom grass grows from six inches to a foot and a foot and a half. The better parts of it were cut for hay, and the balance was left for pasture. There is a small amount of waste in the rye grass that the cattle don't eat. The lower stalks are very large and become woody if not cut before it is out of bloom, and the stock will not eat every bit of it, except when forced to through hunger. In 1909 I did the last work on any of the lands in the valley. In selecting the land I was gen-

erally there in the summer or fall. In laying out these different ditches it was sometimes in the early spring, in April, and from that on until November. I was not there continuously between those months, and there were seasons when I was not on the river at all. In 1904 there had been a heavy run-off in March that carried away all their old willow dams and washed out what headgates they had there. I went over there the first of April and was there almost continuously until just before the first of July. I was assisting in fixing up the old works and in laying out new head places to get the water out where the old works were destroyed. There was also a little work done in extending some of the lateral ditches. It would be a very poor estimate that I would give as to the number of tons of hay cut on the Salmon River ranches, but I should guess it somewhere between 200 and 300 tons. It did not vary much from year to year. The Vineyard ranch was fenced when I went there in 1880. The valley from Bird's Nest to Bore's Nest was apparently fenced when I went there in 1899. I did not assist in irrigating these places, except that in 1894 it was in such bad shape I did about as much work as any of the men in getting the water out of the river and preparing to spread it. I did not assist or have charge of the spreading of the water. There was a time when I believe they sold a little hay to the miners at Contact. This would not amount to fifty tons a year. I am reasonably certain that alfalfa was placed upon about 20 acres at San Jacinto in 1893. The crop was just ordinary; it

might be two or three tons to the acre. I think this alfalfa is still there. For a few years after 1893 it was irrigated from the Warm Springs ditch; later from the Middle and Lower San Jacinto ditches. The upper tract was irrigated from the Upper Warm Springs and Middle ditch. The alfalfa was on bench land. This is the only crop of tame grass, except some at the Bridge ranch. Some of the bottom lands along the Salmon River were in sagebrush to begin with. When I first went into the country in 1880 the upper part of what is called the island was sagebrush; practically no grass at all. Alfalfa was cut twice a year. I believe they raised some grain under the Warm Springs ditch. The method was to clear off the ground and put it into grain one year, and the next year put it into grain and alfalfa. The Warm Springs ditch rises in a spring and flows about a mile and a half parallel to the river, and empties into the river. In 1904 the work was principally in fixing up the old workings, and a very little new work. The ditches are shown on Plaintiff's Exhibit No. 18 about as they are on the ground. There are some ditches upon the ground that are not shown upon this exhibit. The ditches taken from Jake's Creek are not shown. Two of them started a little south, in the northwest quarter of section 22, 45 north, 63 east, upon each side of the creek; one extended northeasterly and the other nearly due north. That would be about a quarter of a mile up the creek from the ditch that is shown in the northeast quarter of the northwest quarter of section 22. The land that is irrigated from these

ditches commences in the northeast quarter of the northwest quarter of section 22 and the northwest quarter of the northeast quarter of section 22, extending on both sides of Jake's Creek and running down and connecting with what is marked on Plaintiffs' Exhibit 18 as the old Vineyard ditch. There is some sagebrush still on the land lying between the ditches on the upper side of the colored ground on Plaintiffs' Exhibit 18 and the upper Vineyard ditch, but it has been irrigated for a great many years. It is grown up with a heavy growth of rye grass; that is part of it. All of that lying between the Upper Vineyard ditch and the shaded portions of the map is not irrigated. There was a strip along there varying from perhaps 50 yards wide in the upper end to three or four hundred yards at the lower end that was not irrigated. The balance was irrigated, either from Jake's Creek or the Vineyard ditch. A small amount of this land not irrigated is in section 22, and the balance in section 15, 44 north, 63 east. There might have been some of the land lying outside of 15 that was between the ditches shown on Plaintiffs' Exhibit 18 watered from Jake's Creek. The overflow dropped into the Vineyard ditch and assisted in irrigating the lands below that ditch. They are not all in sagebrush; by that time it was getting into meadow land. Above the Vineyard ditch the greater part was in meadow in 1904. The ditches taken out from Jake's Creek prior to 1880 created the meadow. The Upper Vineyard ditch was constructed in May, 1889. I started the survey at the crossing of Jake's

Creek and extended it up the river to the point marked "Tunnel" on Plaintiffs' Exhibit 18. I did not survey the balance of the ditch at that time. I think the next time I saw the ditch after it was commenced was in the spring of 1890. In passing by on the road I could see that some work had been commenced on the west side of Jake's Creek. The first time I saw water flowing in that ditch was in last November. The notice of location was made out May 6th, 1899. On Plaintiffs' Exhibit No. 18 the Harrell ditch commences in section 9, 45 north, 64 east. After 1904 the point of diversion was changed to a point higher up, in the neighborhood of three-quarters of a mile. It was surveyed in 1892 and the first work was done to my knowledge in 1893, about the 10th of October. From appearances they worked there only a short time. C. B. Moore was in charge. There was no foreman on the San Jacinto at that time. There was a man there by the name of Buck Rice, who put up the first cabin. I had been there only two or three days when he left there. Mr. Bowers was manager of the whole of the company's property. It was then called the Rancho Grande. In the fall of 1893 the Harrell ditch was constructed from the river to the Roland East Side Slough, a distance of perhaps ten chains. I think the next spring the slough was enlarged to a sufficient carrying capacity for a distance of perhaps a mile. In the fall of 1894 I believe there was a ditch taken out from the east side of the slough to irrigate some of the bottom lands that had formerly been irrigated from the Roland Slough. By

getting a surface irrigation they could secure a better crop. That ditch was taken out in the northeast quarter of section 3, 45 north, 64 east. It was perhaps half a mile long, as near as I can remember. I don't know when the next work was done on the Harrell ditch, but I measured up work that was done by Mr. Moore in October, 1894, and found that he had done work on the ditch 94 chains in length, seven feet wide and nine inches deep, and this work was within about half a mile of the ditch I described and I am reasonably positive it took in a part of the ditch that starts from the Roland Slough at the south side of section 34, 46 north, 64 east, and extends north and easterly across section 34. There were two separate ditches or laterals taken out of this slough. The next work that I have any record of was in September, 1897. The ditch was started from the Roland Slough to carry the water on the bench lands as originally intended. I laid it out 77 chains in length, and I think that was nearly, if not all, constructed that fall. That would be a good three miles and a half above the San Jacinto lane. The next September I started at that point and laid out the ditch to a point opposite the San Jacinto lane, 330 chains in all. The terminus of the Harrell ditch in 1909 was at the same place as in 1904. I know Mr. Moore did work upon it as soon as I laid it out. He was on hand to continue the work and carried it right along. His crew consisted of men separate from the ranch hands, but the men were used on ranch work whenever they were needed, and placed

on the ditch work whenever they were not being used on other work. The work was done at different times from year to year when there was nothing else to do. I believe the ditch was constructed that fall about to the line between the Lower Middle Stack field and the Warm Springs field, three-quarters of a mile. In the fall of 1904 the lower end of the canal was at a point about a quarter of a mile north or northeasterly from the east side of the San Jacinto lane. The road that now crosses the ditch in the lane has been put in since the ditch was constructed past there. The original road turned directly north between the fence and the ditch and crossed the ditch line about half or three-quarters of a mile further down. The end of the ditch was a little northeasterly of the center of section 13, 46 north, 64 east. I think the water was first carried in that ditch down as far as the lane in 1904 and was used in irrigating the up-lands from the lane south practically clear to the head of the ditch. As fast as the ditch had been constructed water had been turned into it and all the lands irrigated between the ditch and the old irrigated lands on the bottom. I laid out some work on the Harrell ditch in 1909, but I don't know whether the work was done that season or not. I started at a point about a quarter of a mile north of the San Jacinto land and surveyed the ditch line from that point to the crossing of Trout Creek, just east of section 6. Since 1909 I haven't had anything to do with this ditch. I don't know of any other ditches being constructed between 1904 and 1909 as I was not connected with

the company from 1907 until 1909. When I went there in 1909 it was to lay out this one ditch.

I actually surveyed the outer boundaries of the shaded portions shown on Defendant's Exhibit No. 5. The exhibit is drawn and prepared according to stations and lines as they were run by me at that time. I put no stations on my original maps, nor any courses or distances in my notes. In fact my notes consist simply of a plat or series of plats in my note book.

In making my survey I would go to a section corner or quarter-section corner for a start. My plat book is laid off into squares, and I would take a certain number of those squares to a mile and then I would start from a corner, and I would run up along perhaps a section line for a ways, say one of those squares marked five chains square, I might go ten chains, and then I would note what there was on each side of my line, and perhaps I would go a quarter of a mile north, and then if I appeared to be getting too far away from what I wanted to locate I would turn and perhaps go to a course that in the next quarter of a mile would bring me ten chains east.

I was alone and was engaged about four days in making those observations. The first sketch was made on the ground. The next I sketched out on a small scale or a map the work I did each day. This map was larger than the map in my plat book and was left in camp. I used a transit in doing my surveying, and in sketching my maps I laid off my sec-

tion lines and the quarter-section lines, then sketched in from my plat book. I stepped the distances from the section corners. I was attempting to locate the lands that water was turned upon and was irrigated by the company, either by flooding or from water carried through ditches or sloughs and dams placed in the sloughs to spread the water over the ground. The land is tolerably even from one side to the other and has a heavy fall at the upper end about four or five miles down to Bore's Nest. It is nearly 25 feet to the mile. It gradually gets less as you go down the valley to the Bore's Nest. I believe the fall there is not over six or eight feet to the mile. I could tell the irrigated portions partly from the edge of the bottom where the grass land stopped and sagebrush commences. In one instance I was able to determine the lower end of the irrigation from the Gray's ditch by seeing on the ground where the water had flowed and spread over there during that season. I was there in October. The irrigation ceased about July 1st. They stopped irrigation in those meadows between the 1st and 10th. Haying commences about the 10th of July. In some parts they continue the irrigation for some days longer in order to keep the grass green. With small crews of men it would take a long time to cut the hay so the water would be turned off first from some parts of the ground and on others they would keep the water on longer to continue the growth so it wouldn't ripen so quickly. They commenced to irrigate on or before the 1st of April of each year. There may be snow storms in

April; there never was any when I was there. I have heard that they have hail storms over there. There is only one season that there might have been snow storms there, and that season was one when they had several inches of snow in the northeastern part of Nevada on the Fourth of July.

I made no distinctions on the map between the parts of the ranch that were never cut for hay and that where there were willows and other kinds of brush. The shaded portion is all irrigated land. The total acreage, including the 814.4 acres on the Vineyard ranch, is 4,992.8 acres as shown on the shaded portions on Defendant's Exhibits 4 and 5. In 1889 I don't think over 1,000 acres had been cut for hay any season in both tracts. Fully that acreage has been cut over; not entirely on those lands but on other lands placed under irrigation. The land that was cut over when I first knew the country is almost all used for hay land; some of it has grown up to willows and they used it for pasturage. In 1904 there were four or five thousand acres being cut over. They were cutting over land that had formerly been used for pasture and sagebrush that had never been irrigated. When I saw the land in 1909 it was not substantially in the same condition as in 1904. A great deal of brush land had been cleared off and they had cut hay off of it. That was all up and down the valley from the Hubbard ranch to the Bore's Nest. It appeared to me from just what I noticed in traveling down the valley that they had cleared off brush from all parts of it in different small pieces, say a

few acres in one place and 15 or 20 acres in another, under works that had been constructed previously.

Rye grass as a rule is in bunches, with nothing between the bunches. It was cut for hay. On the Vineyard ranch where the most of the rye grass is there must be three or four hundred acres that is cut for hay, and the hay is used for feeding the stock. It is the strongest hay that there is there when it is cut at the proper time. I have heard that they call a field below the original Vineyard field by the name of Starvation field. That is not included in my estimate of the acreage that was cut over or irrigated.

RE-DIRECT EXAMINATION:

The tract referred to as Starvation field is not included in the shaded area showing the irrigated lands on Defendant's Exhibit No. 5. The greater part of the land that I noticed in 1914 from which the brush had been removed was under the irrigation system of 1889. I am not positive as to when between 1904 and 1914 this clearing took place. The grass and verdure that was grown upon those lands before the brush was taken off was used as pasture for cattle and horses. In the early years there was no feeding done of any stock except two or three saddle horses and a milch cow during the winter. The stock rustled their feed and there was hardly any hay cut. That system changed after the winter of 1889-90. There was a loss of about seventy to ninety per cent of the stock, due to the carrying out of that system. The owners decided that it would

be advisable to cut a little hay and commenced to provide for carrying their cattle over such seasons. There was a steady increase in the amount of hay cut, although there was not a corresponding increase in the area of irrigated land. Prior to that time there were lands on which hay could be cut that was simply used for pasture. In some instances that is still taking place. I have noticed in going over the country almost every year tracts of land that were either in a position to cut for hay that is still used for pasture, or tracts that by clearing off a little brush or willows might be used for hay. The growth of grass was amply large enough to cut for a hay crop. Rye grass not cut for hay but used for pasturage is very valuable. The grain is almost equal to oats for feed, and when you put a band of cattle or horses into a field of that grass the first thing they do is to eat off the tops of the grain, and then gradually go down on the stalk and the blades of grass growing on the side of the stalk. During the many years of my experience in the valley I think that generally about all the grasses were consumed by spring. I have seen water flowing on the meadows at the Hubbard ranch after the hay is put up. Just at present I can't remember any other place.

Q. Now, I will ask you, Mr. McClellan, to state whether or not from your knowledge of that particular kind of irrigation that took place in that valley and on these ranches, and of the kinds of crops that were grown there, if you are able to tell us in miners' inches the quantity of water that would be required

upon those lands say from the 1st of April until the 10th of July?

MR. HAGA: That is objected to, if the Court please. Proper foundation has not been laid.

THE COURT: Sustained.

Mr. McClellan (continuing):

I have had experience in the growing of crops of the kind that are grown on these ranches. In 1886 I had charge of and assisted in the irrigation of similar crops on the H. D. ranch in Thousand Springs Valley. I did not make any measurements, but I observed the amount of water placed upon the lands and estimated as closely as I could. The water is customarily used continuously on the land from the 1st of April to the 10th of July, and as a rule is flooded during all of that time over the entire surface. I know the quantity of water per acre in miners' inches that would be required for that purpose.

Q. You may state what quantity is required.

MR. HAGA: I object to it.

THE COURT: You may interrogate him as to how he knows, if you desire.

CROSS EXAMINATION (by Mr. Haga):

I made a rough measurement one time by taking the depth and width of water flowing through a head-gate at the Bird's Nest ditch, estimated as closely as I could the velocity of the water at that point, so as to consider the amount of water flowing through that ditch. It was some time during the month of May in 1897, I believe, but I am not positive. That is

the only estimate I made of water flowing in the defendant's ditches on Salmon River by taking the actual size of the head-gate and the depth of the water flowing through it. A lot of the water was diverted and used from the river by means of dams without ditches or headgates. That might have been measured if a person would take the time and pains to do so, but I did not do that. I had no current meter for measuring the water at the time I made the estimate on the Bird's Nest ditch. I made the estimate to see about the amount of water that was going out there, was all. I own a current meter and use it sometimes. I have used it on the Humboldt River. I have had more experience with weir measurements, in Reno, in Ruby Valley, Independent Valley, near Tuscarora, in Mound Valley and on the south fork of the Humboldt. I have never conducted any experiments to determine the amount of water that the grasses grown on these lands require for the best growth. I think I know the amount of moisture that is required in the ground for the most favorable production of the crops or grasses grown on defendant's lands. I have not conducted experiments for that purpose. I have seen experiments conducted in other places but not in this valley, on this kind of crop and to determine the amount of moisture that is present in or upon the soil for the production of that kind of crop. I did not compare the result for the varying quantities of water put on the soil. My experience was on one of the ranches of the company, called the H. D. ranch, in Thousand Springs Valley,

in 1886 and I think in 1895. I had charge of irrigation. The water was turned out in identically the same way as on these lands. That is not the extent of my experience in actual irrigation. I commenced irrigation on my father's ranch when I was 12 years old. On lands of this kind that was the practical extent of it. I have observed the same irrigation throughout Nevada as used in that way.

THE COURT: Objection sustained. I will say to you, gentlemen, that there was a time some years ago that we tried to adjudicate controversies of this kind with evidence perhaps no better than would be given by this witness on this point, because that was the best evidence we could get at that time, but that is no longer necessary. Irrigation has advanced to such a point, and we have had so much experience with it, that it is entirely practical to have scientific, practical evidence on a matter of this kind. The mere fact that a large amount of water has been used upon land is no evidence that a large amount is necessary.

RE-DIRECT EXAMINATION (continuing):

Q. Do you know of any reason, Mr. McClellan, why, if it be a fact that it is necessary to keep water flowing over the surface of the ground for the production of such crops as you have spoken of along the Salmon River?

A. Yes, sir.

Q. Why is that?

MR. HAGA: If the Court please. That is objected to. No proper foundation has been laid.

THE COURT: Objection sustained. The witness has not testified that it is necessary, Mr. Nebeker. You asked him why it was necessary.

MR. NEBEKER: I asked him first if he knew of any reason why, and I asked him what that reason was.

THE COURT: Yes, but that is getting at it indirectly, to the question whether or not it is necessary. If you were to ask him the question whether or not it is necessary, I should have to sustain the objection on the ground that he is incompetent to answer that question.

Mr. McClellan (continuing):

In my experience in irrigating lands of this character, as to the result upon vegetation of that character of irrigation, I have observed the result if water is not caused to flow over the surface during practically all of the period from April 1st to July 10th. I have made these observations on Salmon River, Thousand Springs Creek, the Owyhee River, in the Humboldt Valley, Clover Valley and Ruby Valley, including several thousand acres, for over twenty-five years. If the water is not caused to flow over the lands continuously there would be little or no grass grown. If the water was taken off for ten days prior to cutting, or from that to two weeks, the effect would be that the crop would ripen immediately and stop growing. It would stop inside of a week or less. The grass that has been irrigated by that method will stop; rye grass as well as any other grass. Rye grass will grow a little longer because the live roots

extend down a little deeper than the others; but the other grasses there are no live roots a quarter of an inch below the surface. If rye grass has been irrigated for a few years under the method used in that country the deeper roots will all die. The only roots that are left are surface roots. The minute you take the water off the ground it dries up on the surface. There is no moisture for the roots and the growth stops.

I went over these properties along Salmon River in 1914 and I found additional areas that had been brought under irrigation subsequent to 1904. These were located on the bench north of San Jacinto lane, under the Harrell ditch. With the exception of those areas the irrigated area on the Salmon River appeared to be the same in 1914 as in 1904. I observed the size of the Harrell ditch at two points between the San Jacinto lane and the head in 1914. It had been cleaned out and appeared to me to be about the same size as it was in 1904, but it was in a better shape for carrying water. In 1909, at the time I laid out the Harrell ditch to a point opposite the San Jacinto lane, I placed stakes at the corner posts on each side of the lane and took notes of the elevation. From that data I was able to bring up my elevation to a point opposite the lane and continued the ditch line on to Trout Creek. It was the same line that I had surveyed in 1897. When I located the line in 1897 I placed stakes every ten chains, and set willow flags, and the survey I made in 1909 was on exactly the same line.

A ditch has been constructed on the Vineyard ranch since I was there in 1904. I believe it is fully a mile and a half above the head of the old Harrell ditch and extends easterly, or southeasterly, following very close to the river first and afterwards very close to the old Harrell ditch, until it reaches the point of the hill bending around and up Jake's Creek and this ditch extends in almost a southerly direction to near the upper end of the Vineyard field where the fence crosses Jake's Creek. The ditch then extends almost due east across the bottom to the east side of Jake's Creek bottom, and thence in a northerly direction along the east side of Jake's Creek bottom. From the examination I made as we were traveling along the road there must be altogether 100 acres, but not more, under the new Vineyard ditch than had been irrigated from Jake's Creek and the old Harrell ditch. As I observed the irrigation that took place upon these properties during the years that I was there, water was taken through the various ditches I have testified about to their full capacity, with the exception of the Harrell ditch. The water was used upon the land.

RE-CROSS EXAMINATION:

The lands shown on Plaintiffs' Exhibit No. 18, lying on both sides of Trout Creek, and a part of the tract that is colored green lying under the High Line ditch, and being in sections 36 of 47, 64, section 1 of 46 north, 64 east, and section 6 of 46 north, 65 east, were not under irrigation in 1909. A part of the land colored green on Plaintiffs' Exhibit 18, but not

all of it, was not under irrigation in 1909. The part colored green lying to the east of the Mitchell slough and south of the San Jacinto lane was under irrigation not only in 1909 but in 1904. All of the land under the Harrell ditch as far north as the San Jacinto lane was as far as I know under irrigation in 1904. It was irrigated for pasture but not cut over. The sagebrush was still there and the water was run into the sagebrush; that was the only use made of it. I do not remember seeing water in any of the ditches on these lands after 1904. Since that season, I was in the valley almost continuously from the 1st of April to the latter part of June and I saw water in every one of the ditches and flowing out from every one of the dams that had been placed in the river, or flowing over the land from those places. I was on the property only occasionally, except in that year. Irrigation was not delayed much that year that I know of. The men were getting the water on by the first of April. Some places didn't need fixing very much to get the water out on the land.

When I saw the Harrell ditch in 1914 I saw new dirt thrown on the banks. I was sitting in the automobile and just stopped on the bank and looked up and down each way. Outside of the alfalfa fields at San Jacinto the irrigation, after the headgates and ditches were in shape, was done by two men for a number of years. They covered several thousand acres from Bird's Nest to Bore's Nest, about 13 miles. Their duties were to see that the water was kept out on the land until haying time. They put

dams in the sloughs to throw the water out on the land; they plowed furrows to get the water on the high ground. If something would happen so the water did not get out they would each year run furrows out. They done practically the same way on the Vineyard ranch, only there was generally a man who had a wife living at the Hubbard place and he would come down every few days and see that everything was all right. He had charge of the irrigation on the Hubbard and Vineyard ranches. It was about four miles between the two ranches. There were six or seven hundred acres I should judge on the Hubbard ranch. No one was living on the Vineyard ranch. Two men had their camp outfit and sometimes would stop there, sometimes at the Bore's Nest, sometimes at the Middle Stacks House, sometimes at the Bird's nest and sometimes at the San Jacinto. They moved their camp wherever their work required them to be. It is necessary now to keep the water running on the land to have crops at all. That is due to the system of irrigation that has been carried on there for forty years or more. Rye grass is a native grass. It is not cut for replanting or re-seeding. If it is cut at the proper time, I consider that it would be far superior to alfalfa. I think one ton would be worth two or three tons of alfalfa. The land colored green on Plaintiffs' Exhibit No. 18 lying between the new ditch and the old Harrell ditch on the Vineyard ranch is a part of the land I referred to that wasn't covered under the old ditch. In addition to that there is some of the land immediately under the fence and between

that and the old irrigated lands almost all the way down. It increases in width at one point in the southwest quarter of section 11, and at another place near the north half of section 11, where there is quite a strip of land that was not irrigated under the old ditch. I am reasonably certain it was not irrigated in 1909. The ditch was constructed before the fence and is just outside of the fence.

ROBERT W. ANDERSON, called as a witness on behalf of defendant, being first duly sworn, testified as follows:

DIRECT EXAMINATION:

I reside at Deeth, Elko County, Nevada, and have been there for 33 years on the 18th of this month. I have been in ranching and the stock business ever since I have been there. I first visited the Hubbard ranch in the fall of 1882. I was working for Mason & Bradley at the time and they had bought the ranch that spring. I was there only two or three days. Jake's Creek and Dry Creek flow through the Hubbard ranch and empty into the Salmon River at the lower end of the Vineyard ranch. They have it turned out at the upper end. In the fall of 1882 there were five or six big stacks of hay on the Hubbard ranch. Up until 1887 I was on the Hubbard ranch every fall. The conditions as far as I know were just the same in 1883, '84, '85 and '86 as in '82. I saw stacks of hay there. I moved over there in 1887 and stayed there three years. I went there in May. It was then under fence and had one quite good-sized ditch. I irrigated the ranch out of that ditch. It was

the same one that I saw there in 1882. Water was diverted out of Jake's Creek with a sagebrush and dirt dam. We just turned the water out and banked it up in low places a little, turning all out that the ditch would hold and flooded the meadow; turned out all there was in the creek. I had done irrigating on Mary's River prior to 1887. I hadn't done nothing else only irrigate and ride a little in the fall. I raised about 200 tons of hay that year. It was wild hay, red-top, blue-joint and such like. The only lands that were irrigated and not cut for hay was the sub-irrigated land below the meadow; not very much. In the fall of 1887 I built two dams up on Dry Creek and fenced a big field. That was above the old Jake's Creek field. In 1888 I plowed furrows out on each side and took all the water out, every drop of it, and irrigated that big field to make feed for cattle. I did not cut the grass. I had a solid dam in Dry Creek and took all the water out. I irrigated out of Jake's Creek below on Hubbard and took all the water out of that. I had two ditches in Dry Creek and two in Jake's Creek. I fixed the old ditch up in Jake's Creek and when I didn't need it on the meadow for a while I would turn it on this rye grass flat to make feed for cattle. Down below the meadow I had another dam to irrigate the pasture for feed for our horses and cattle. I didn't need any more dams; I had all the water out. I did the same irrigating in 1889. I irrigated this big pasture. It was used for winter feed for cattle. In 1888 I was down to the Vineyard ranch every few days. There was an old man there

irrigating all summer. I always crossed Jake's Creek between the Hubbard ranch and the Vineyard ranch on my trips to the Vineyard. There would be some water that had seeped back from where I was irrigating. This water was used on the Vineyard ranch. They had two ditches, one on each side. They had a big ditch up to the left of the road as you go down to the Vineyard. I think it was about seven feet wide around the hill there for a mile, I guess. They completed it I think in 1888. In the fall of 1888 they made it wider and it broke over in a lot of places. It carried the water across Jake's Creek to put it in the Jake's Creek ditch. After the first year I was there there must have been six or seven hundred acres under fence at the Hubbard. In 1889 I had I guess a hundred tons more than in 1887. I put up a little over 300 tons in 1889. During the time I was on the Hubbard place they finished that big ditch on the Vineyard. They had a lot of little ditches near the house, but I didn't pay any attention how many. Besides the meadow land they irrigated a big flat there on the east side of the river upon which there was rye grass and other wild grass. In 1898 I passed by there and went down to the Vineyard and stayed there two nights. I think it was in November. It looked to me like there was quite a bit more hay than in 1889. They had some pretty big stacks there. Sparks & Tinnin were the reputed owners of the Vineyard ranch. They had four cattle outfits and had thousands of cattle. They fed a few of them, the poorest ones, and put the others in these

big fields where they would feed. Some of them went to the desert in them days.

In my experience in irrigating we turn all the water out that we can get out of the creek; have been doing that for thirty odd years. I have got two ranches of my own and I always turn out all I can get, both places. I have been in business for myself about seventeen or eighteen years. My place is on the head of Mary's River, T Creek. I raise hay and feed, about the same way as I raised on the Hubbard when I was there. I turn out all the water I can get and leave it on as long as it stays. That is the way I have always irrigated because if we don't keep it there we don't get any hay. I know that by experience. You don't get much hay if you haven't got water to flood your meadows. If you take the water off it soon dries up. I generally take it off a week or ten days before haying. Before we get through it is so ripe that we can hardly stack it. I have irrigated every foot of the Nevada Land & Livestock Company's ranch and built most of the ditches. They have got 34 miles of solid fence and in some places it is half a mile wide and some places a mile and a half. They raise hay all the way down the stream. There is places they don't cut hay, but they irrigate it for their winter feed. There is no difference between the system of irrigation on that ranch and over on the Salmon River. You take all the water you can get in your ditch and keep it full. You then go along and scatter it. I irrigated steady on the Nevada Land & Livestock Company's property for six or

seven years and helped there for sixteen to nineteen years. I worked sixteen years at it. Part of the time I was running a cow outfit and I had men irrigating. I would go there once in a while and if they wasn't doing it right I would tell them how it was to be done. It was about 70 miles from my Humboldt ranch to the Hubbard and Vineyard ranches. I flood the land every year, every bit of it; fill the ditch full and flood it all. The same system of irrigation is carried on by me on the Humboldt as is carried on at the T Creek, Mary's River and the Hubbard. They all irrigate in Elko county the same way. I am familiar with ranches on Table Creek, North Fork, Star Valley, and all through that country. In Clover Valley they turn the water out on their land and flood it.

CROSS EXAMINATION:

In 1889 at the Hubbard ranch I suppose I cut 300 acres. We irrigated quite a lot more for pasture than what we cut for hay. That was true at the Vineyard ranch also. We figured that the pasture was worth about as much as hay. I don't believe I could tell from the maps where those ditches were located on Jake's Creek. I don't know much about maps; it is out of my line of business. One of the ditches from Jake's Creek run around that big rye grass flat and into the river below it. I don't know how long the ditches were. I couldn't tell how big they were. I was using most of the water at the Hubbard ranch. They had some water at the Vineyard ranch. I don't know how much land lay be-

tween the Salmon River and what is called the Harrell ditch on the Vineyard place, and the two ditches from Jake's Creek. I don't want to say anything I don't know anything about. We put water on sagebrush land and made meadow land out of it. I didn't have much to do with irrigating the alfalfa. I don't raise much grain. I have always been in the stock business, and the company I worked for never raised grain until the last two or three years when they put in a little grain. A shortage of water occurs every once in a while from the time the snow begins to melt until haying. This one year we had a little water and got it on a few patches; and with the water we had we flooded just the same all of the land we could flood. I guess the flooding system of irrigation is a habit; I don't know much about the expense. That is the only way we can make hay. Nobody can make wild hay without flooding. It makes more and better hay by keeping the water on the ground all the time while the hay is growing. Sometimes the water barely covers the land; sometimes it gets pretty deep, but we hardly ever turn it off from the time we put it on until we get ready to go haying. They all do the same. The water is running over the land all of the time, if we have got water enough in the river. The slough grass that grows in deep water ain't as good hay. The water doesn't stand on the land; it is running off. Turn it on and let it run right through it. Where the water runs there is red-top and such like and where it stands in deep sloughs there is only slough grass. Where it stands deep, maybe a foot

deep in these low places and just stands there, it makes slough grass. It ain't that deep where it is running. If you don't get no water you don't get no hay and that's a cinch.

RE-DIRECT EXAMINATION :

We figure that such winters as last winter we don't need to feed the cattle so much, but let them winter in those fields. We save the hay until the feed is covered up. Maybe next winter there will be two feet of snow and we will then use hay. We have had to have a heap more hay since the hard winter in 1889 and 1890. Now days we figure that if we ain't got no hay for the stock we ain't got no business having stock. In them days a man took chances. We feed the poorest ones and put the rest in the field and let them winter themselves. We irrigate the pastures to make grass for the cattle. We cut the slough grass for hay. Once in a while there is a hole in the slough that don't dry out, but if the water gets off of it we cut it all. We put the water in the big ditch and plowed a few furrows under the ditch and cut holes; then go on further and cut another and keep flooding the meadow in that way. The water goes into the ground and back into the creek. It is moving constantly except in the low places. I guess the seasons on the Salmon River are about the same as my ranch. It takes later water for alfalfa, but not as much water. We irrigate it and turn it off. The slough grass makes good hay if you cut it before it gets too high. Where it just flows over it all the time it makes the prettiest kind of wild hay. We don't have

any grass called tules. The best hay grows on the higher ground where the water runs over it all the time. There are places where it don't grow hay if the water is too deep. Slough grass is a kind of round hollow grass. It doesn't head into a seed. I have never seen any swamp grass that grows in the water under conditions as I described them. We have places where they turn the water on in the fall that makes a wide-bladed grass that we call self-rising grass. It isn't good for anything. I never tried the experiment of watering the lands and letting the water soak the ground thoroughly every ten days. In May the grass will grow for a few days without water, but if the ground is hot it won't grow, it will begin to ripen. It is the same in June. If you take the water off it seems to stop growing. In the last of June and July if you take the water off it goes to getting ripe.

L. A. NELSON, produced as a witness on behalf of defendant, being first duly sworn, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley, Idaho. I went to the Salmon River section in 1880 as a cowboy for Jasper Harrell. I was there with the exception of one or two years up to 1892. I wintered part of the time at the Vineyard and one or two years at the Middle Stack, and the balance of the time on the Brown ranch in Idaho, just north of the state line. In 1880 when I went to the Hubbard and Vineyard ranches there was some irrigation down there from Jake's Creek. The water

that came down there was run out on the flat and later on there was a ditch come out of Salmon River that run across Jake's Creek. The flow of Jake's Creek that wasn't used on the Hubbard ranch was used on the Vineyard. On the Hubbard ranch I would say there was possibly a hundred acres being irrigated in 1880. They increased the amount of hay right along pretty regularly up to the time I left there, especially after 1889. After Mr. Anderson came onto the Hubbard ranch they made more ditches, or took a little more pains to irrigate the Vineyard. I suppose there must have been close to four or five hundred acres at the Vineyard that water was scattered over. In 1890 the ranchers began to cut their hay more extensively and to feed more than they had theretofore. I think Mr. Anderson was there about three years while I was in that section. For several years from the Bird's Nest on towards the north the water would overflow, especially in the sloughs and places up near the Bird's Nest. There was a ditch taken out there and one down about a mile below. It was turned out into the sloughs. And there was one ditch at the Middle Stacks. In the spring of the year before we started out with the cow outfit we would go out and haul manure and place it in the sloughs to back it up and turn it out in different places. The general system of irrigation was flooding such as has been explained by the witnesses who have before testified. That was the only system that was used in Nevada so far as I know. Besides the water taken out from Jake's

Creek the Vineyard ranch was irrigated from a ditch taken out up in the narrows of the canyon of Salmon River. I was there in January last winter and there was more, but not very much more, land being irrigated. We were irrigating quite a considerable of the Vineyard when I left. They figured on trying to cover the whole flat.

CROSS EXAMINATION:

We fed very few stock and we rode considerable during the winter time. In 1892 I think we put up 100 to 150 tons at the Middle Stacks. That was in either 1891 or '92. I hardly think there was any put up at the Bore's Nest nor at the San Jacinto ranch. I think there was more put up at the Vineyard. That field was used a great deal for pasture. They were just about completing the fence around the Big field down on the river when I was there. I mean from San Jacinto to the Bore's Nest. I couldn't tell how much land exactly we cut over at the Middle Stacks. We would just skip around here and there and pick out the best of it in spots. In some places we would possibly get two tons to the acre and other places it wouldn't be quite so heavy. There was some rye grass, though we didn't cut much of that. We cut more along close to the river where there was finer grass. We didn't consider the rye grass as good hay unless it was irrigated. The bottom lands were irrigated then more than the rye grass which was out further from the river and was used for pasture. I couldn't say what part of the Vineyard ranch was irrigated from Jake's Creek.

The majority of the land is below Jake's Creek so it would run over the whole thing if there was water enough. The water from Jake's Creek mingled with the water of Salmon River through the Salmon River ditch. That ditch came from the Salmon, went across Jake's Creek and around the field kind of on the outside, so that they could scatter it as much as possible over the field.

RE-DIRECT EXAMINATION:

We put up hay primarily for the saddle horses. The cattle used these sections of the valley along there for winter grazing. They simply used up during the winter such grasses as were grown or irrigated or produced within the valley. If we didn't have grazing enough, we would shove a bunch down on the desert. Each year we figured about the amount the grass in the valley would support during winter grazing.

MARK CONGER, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I reside at Wells, Nevada, and have been acquainted with the Salmon River section from 1901 to 1907, except 1902. My job was punching cattle. I made my headquarters at the Vineyard during most of the time. Henry Harris was in charge at the Vineyard. During those years we fed the cattle that needed feeding and what didn't we run on the pasture. The pasture was wild meadow grass and rye grass and the hay was the same. At the San Jacinto there was an alfalfa field on the west side, but no

other tame grass; the rest was all meadow land. There was always water on the meadows in irrigating time when I was there, and still further east between the alfalfa and the river water was always on the land during all of the years I was there. I mowed the hay over the Hubbard ranch and the Vineyard too. In 1901 to 1907 I should judge two or three hundred tons was produced on the Hubbard ranch and a similar amount on the Vineyard ranch.

GEORGE R. BOLDING, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I am fifty years old and reside at Wells, Nevada. I have resided in Elko County eighteen years next June. I went to the Salmon River country in 1897 to do carpenter work at San Jacinto. What they called the store is a stone building thirty-two feet by forty-eight feet. I was there and at the Bore's Nest until the next April. When I left there the first of April they were irrigating the land. The part that I saw was up north from what they called the Gorge to San Jacinto on the west side of the river. The ditches I crossed were all full of water. I was there in 1901 and 1902 with a freight team. The acreage at the ranch was being irrigated. It looked to me like there was about a section of land. The method of irrigation at the Vineyard, Hubbard, San Jacinto and Middle Stacks was by flooding the ground. I have been acquainted with other sections of the Salmon river at O'Neill's and Helsley's on the head-

waters above the Vineyard for 12 or 14 years. Their lands are about the same as at the Vineyard and Hubbard, only a little higher elevation. The method of irrigation at O'Neill's and Helsley's is by flooding the ground, the same as on the Salmon River. Helsley has a few acres in alfalfa, but I never saw any on the O'Neill place. The O'Neill ranch is about ten or twelve miles above the river, and Helsley's is about fifteen or eighteen miles, on Wilson Creek, a tributary of the Salmon River. I have built hay derricks for the last fifteen years over the east end of Elko County. I have had opportunity for observation at Clover Valley, Ruby Valley and Star Valley. I think they are a little higher than the Salmon River. The character of vegetation is about the same. The methods of irrigation are by flooding the ground the same as on the Salmon River side. I know of no other method of irrigating the wild grass lands. Where they have alfalfa or other crops they use different methods. Mr. Helsley had some alfalfa in when I first went out there. He has other tame grasses, clover and such as that.

CROSS EXAMINATION:

I judge that Halsley and his boys have a thousand or fifteen hundred acres. I think they irrigate them in the same way, by leaving the water running on the ground throughout the summer. The other ranches I referred to situated in Clover Valley and other places are cattle ranches and use the flooding system where one man looks after a large acreage. That system isn't used on grain and alfalfa, nor potatoes.

RE-DIRECT EXAMINATION:

The O'Neills have got a lot of land on Upper Sun Creek, Lower Sun Creek, Canyon Creek, Cottonwood Creek and Twin Meadows. The ranches extend several miles and are pretty nearly all irrigated. The creeks I have mentioned are tributaries of Salmon River. I have built them five or six hay derricks. I have heard the boys mention they average from six to eight thousand tons a year of wild hay. I never saw any alfalfa on the O'Neill's place.

RE-CROSS EXAMINATION:

I am unable to give any estimate from my own observations as to the amount of hay they cut.

HUGH McGUIRE, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I reside near Wells, Nevada. I was first over on the Salmon River valley from the Vineyard northerly to the Bore's Nest gorge in 1899. I was working for the Sparks-Harrell Company from then until 1906. I was engaged mostly in ditch and fence work and haying. C. H. Hewitt was superintendent at that time. He resides at Spring Dale, Arkansas. The first work I did was on what is called the Harrell ditch, or Big ditch, just across the river from San Jacinto. It was the ditch mentioned in Mr. McClellan's testimony. I worked about two weeks at that time and then we were changed off until after haying time. After that we went back on the ditch work again, on the Harrell ditch part of the time and on some other ditches. We did repair work on the

Bird's Nest ditch and some on the Rainwater ditch and on Moore's cut. Mr. Rainwater had charge of the work in 1900. Our work extended from after haying time until after it froze up in the fall. We did some work on the Rainwater ditch and repair work on several of the ditches and dams. The majority of the work was done on the Harrell ditch. We did some work at the Bird's Nest fixing up dams and such as that. In 1901 I commenced work on the Harrell ditch in April and worked until about June; then moved to Shoshone Creek and worked on a new ditch there until haying time. The work on the Harrell ditch was extending it further and cleaning out part of it that had not been quite completed. There was no land irrigated from that ditch north of the lane, but it was being irrigated between the Harrell ditch and the lane. In 1901 I should judge the ditch was extended about three-quarters of a mile. I had charge of the work myself from 1901 until 1906. I did ditch work at various places over the entire lands of the Sparks-Harrell Company. The work on the Shoshone Creek in 1901 was on a ditch on the north side of the creek, taken out from the slough I should judge a mile or a mile and a half above the ranch house. The ditch we opened up was about two miles long. I believe it was ten feet on the bottom and about eighteen inches deep. It was pretty well constructed in 1901. Later we had to go back and do a little more work but not much. I don't remember doing any other ditch work on the Shoshone ranch. The work on the Harrell ditch in 1901 was

with teams and scrapers. There was some hard-pan but no hard rock. I believe it was eight feet wide in the bottom and four feet deep. I don't remember the grade. We ordinarily employed three to five and six men and sometimes more in a crew. I don't remember of doing any ditch work in 1902. The telephone line was constructed through there in 1903. This line started at San Jacinto and extended to the H. D. ranch, about forty-five miles, and it was constructed by the company. The last work I remember doing on the Harrell ditch was the latter part of June or the first of July, 1904. It was from the end of the lane that runs east of the San Jacinto and for about a quarter of a mile around a little point. We simply opened up a new ditch for about a quarter of a mile. There was a quite a large run-off in the spring of 1904 and we started in in the spring repairing ditches where it was most needed. We did some work on the Gray ditch on what is called the island. I believe it was something like a couple of hundred yards. In 1905 we did work opening up what we called the Tunnel ditch on the Vineyard. That was after haying time in the fall of the year. We opened up something like a mile and a half or two miles of ditch. I believe it was eight feet wide in the bottom and eighteen inches deep. There was some soft rock. I was engaged in that work until about the 20th of December. We did some work after that on the old ditch at the Vineyard, putting in a head-gate and dam. I believe we enlarged it right at the mouth and put in a larger head-gate.

The bottom land in the country around San Jacinto in 1906 was practically all in cultivation or in hay or native grasses. The lands under the San Jacinto ditch and Warm Springs ditch were mostly raising grass or alfalfa.

CROSS EXAMINATION:

Mr. C. B. Moore had charge of the ditch work when I first went there, and after him Mr. H. S. Rainwater. They did work when I was working there and also when I wasn't with them. One spring I was irrigating alfalfa and wasn't with Mr. Rainwater. Two of us were looking after the ditches and irrigating on the San Jacinto ranch. Mr. Moore had charge of irrigating the native grasses and ditch work and other work that might come up there, and I was working under him. I had charge of it from the time I went there in June until fall, probably October. Mr. Rainwater was my immediate superior during the latter part of 1899 and until the fall of 1900. I succeeded him in the spring of 1901. The work on the Harrell ditch I testified about was being done at times when we were not engaged in other work. I do not know of any work being done on it in 1905 or 1906. I wasn't there all the time. I am quite positive no work was done. The work was extending the Harrell ditch from the lane to the old work. It took about two months. This was in 1901. The first extension after that was in 1904, when it was extended north across the lane about a quarter of a mile. This part I think was about eighteen inches to two feet deep. That part wasn't used for

irrigation that I know of while I was there. It was in that condition from 1904 to the end of 1906 when I left. The constructed part of the Harrell ditch was not enlarged after I went there, but part of it was not finished in the bottom and I finished taking that out and increased its capacity. We would go from one ditch to another and repair and fix up the dams and when there was nothing else to do would do some construction work. The lane I have referred to is the lane on the road from the Bridge ranch, as you call it, to San Jacinto. I commenced work on the tunnel ditch at the tunnel site. I did not work above that. The head of the ditch had not been built at that time. About a mile and a half of the ditch was built below the tunnel. The part I constructed wasn't used for irrigation while I was with the company. I left the company in 1908. I had something to do with putting up the hay at San Jacinto and between there and the Bore's Nest and what is known as the island. That did not include the Shoshone Creek ranch. I would rather not make any estimate as to just how many acres were cut. It was too big for me. About twelve men worked at haying in a regular crew, sometimes more and sometimes less. It averaged about forty-five or eighty days. We commenced cutting usually about the first of July to the 20th, and finished sometimes in September. We ran two machines generally; sometimes it was more, sometimes only one, but two was what we tried to keep in readiness. They were not running continuously; sometimes there was a storm that kept us from work.

I can't give any estimate of the number of tons that were put up. I had nothing to do with the measuring. The strip of land we cut was something like four or five miles. It wasn't a straight block of hay. There were patches that was cut and patches not fit to cut we left for pasture. On the land that I have referred to as being flooded or irrigated there was a bigger per cent of it left for pasture. There was a quite a little of the bottom land that was cut up by sloughs and channels and willows so that it couldn't be cut. That is not complete waste; it makes pasture, all of it. Of course there is some places along the banks, willows and under-brush and various kinds that doesn't make pasture. There was lots of places where there is willows that there is good grass. Most all of the sloughs do not grow anything that stock can feed on. I never paid much attention to the width of the part we cut and I might guess wrong. Some of it was in sagebrush; there was a little sagebrush down on the island and under that part of the Harrell ditch we built. It was not cleared off while I was there; some of it was irrigated and grass was growing on it when I left there. The water was turned out in a lateral. A man did not stay there continuously to see that it was spreading over the land; he was around there once in a while to see how it was working. If it wasn't spreading itself, his business was to spread it. Mr. Yost was in charge of the irrigation work most of the time while I was there. The first year it was another man, I think Catlin was his name. Yost had the fields from Bird's Nest to Bore's

Nest, except the San Jacinto alfalfa fields. The rancher looked after the alfalfa fields. I think the alfalfa received two irrigations to a crop. I think he commenced to irrigate the alfalfa about May; sometimes the frost set the alfalfa back. I have seen frost in the Salmon River country in June. It begins about September. I think on one occasion we had frost in July. At that time we had a snow storm in the whole country. I have seen snow in the latter part of September. A little garden was raised and a few potatoes; not enough for the ranch.

RE-DIRECT EXAMINATION:

The willows grow most of the way right along the river but not a very great distance on either side. Sometimes right at the bank of the river there are no willows. Grass and other vegetation grows among the willows and it was used for grazing. All together I worked on the Harrell ditch four different years from 1899; about a month or six weeks in the first year; about the same length of time the second year; about two months steady in the third year, and about three weeks the fourth year.

RE-CROSS EXAMINATION:

Alfalfa wastes if you throw it out on the ground worse than wild hay does. They didn't have racks for feeding ranch cattle. Where they fed milch cows and thoroughbreds they had mangers to feed them in, but for the range cattle they threw the hay in the sagebrush. So far as I know no one measured the hay or measured the acreage. I don't know how many stacks we put up. I remember one about 150 feet long; not any more as long as that.

ADAM PATTERSON, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I reside at Los Angeles. I received the ranch for the Vineyard Company the 1st of November, 1908. I went out on the properties first in August, 1908. When I had charge of the property we built the Harrell ditch from what is called the San Jacinto lane to a point north of there where the ditch makes a big bend. There had been a little work done at the San Jacinto lane, a distance of about 200 or 300 yards I should judge. We made the extension in the latter part of May or the first of June, 1909. About a quarter to a half mile of ditch was constructed at that time with teams and scrapers. We had ten teams. Mr. McClellan laid out the line. That part we constructed was about fourteen feet in the bottom and three feet deep. It wasn't quite as deep as that in a good portion of the ditch south of the San Jacinto lane. The ditch was extended to about the point where the canal crosses the center line of section 13 where it makes the bend.

CROSS EXAMINATION:

Our company purchased the property from the Sparks-Harrell Company in 1908, but we didn't receive it until the first of November. The work I speak of was done in the following year.

DON H. BARK, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I am an engineer for the United States Depart-

ment of Agriculture, and for six years have been carrying on a duty of water investigation in Idaho. We started the investigation about five years ago and carried it on principally by selecting fifteen and twenty-acre tracts of typical crops, consisting of different types of soil and different topography. These tracts have been scattered from St. Anthony to Weiser; some around Idaho Falls, some at Twin Falls, some on the Salmon River project, some on Upper Wood River and the Lower Wood River country. These tracts were all divided into three approximately equal parts. Some were grain, some alfalfa and potatoes, and different crops. We would use great care to select only such tracts in the beginning as were prepared in the same manner and thoroughly comparable throughout the entire area, and then each tract would be divided into three parts. The farmer would then be allowed to select one of these parts and to irrigate it in his usual manner at such times as had been his usual custom. One of my men was on the ground and each time carefully measured the amount used by the farmer; and the other two tracts were irrigated during the season by applying more water to one than the farmer used and less to the third. Everything was comparable with the exception of the amount of water applied, and it was comparatively easy in the fall to judge as to which tract had the best amount of water applied for the yield it produced. We had some 200 of these experiments, which would make 600 five-acre fields. For the past

five years I have had under my observation all of irrigated Idaho and this year part of Oregon as well. There are no other employees of the Department of Agriculture, to my knowledge, that have devoted their time so nearly exclusively to this type of work. I consider myself thoroughly familiar with the literature on the subject. I have been called upon to write three reports on the duty of water in Idaho and one describing the duty of water throughout the West, which is in the hands of the Washington authorities at this time. We have had a good man go through the library at Washington, which is carefully card-indexed and cross-indexed, to find all of the literature upon the subject which could have a bearing upon the duty of irrigation water, and we couldn't find very much. There is some published at the Utah experiment station under Dr. Widtsoe, where, probably outside of what we have got here in Idaho, there is more published than in any other place. My investigation includes reports published in foreign languages. I have become familiar with the literature I have had available. The general object of the investigation was the conservation of the water supply. I didn't find out how much water you could apply and raise five tons of alfalfa to the acre; I would study how little water you could apply and still raise five tons. In stating the ratio or relation, if any, that exists between the amount of water used on pasture lands and the amount of crops produced, I would say that up to a certain point the more water the more pasture. It doesn't differ ma-

terially from alfalfa, but it does differ very materially from potatoes and orchards and grain. You can very easily apply too much water to grains so that you will absolutely decrease the yield. In some cases where you apply three feet deep to grains you might raise less crop than if you didn't put any water on at all, but that isn't true of pasture. Up to a certain point the more water the more pasture, and it will require fully twice as much as for grains. I don't think I ever found the point in the pasture lands after which the application of more water would result in no increase, or an actual decrease, of the crop, because we never put water enough on. We have put about four and a half acre feet on upland pastures and we still got more pasture. Up to four or four and a half acre feet on average soil, I would state without qualification that the more water used the more crop would be produced. Whatever qualification there is will be based on something other than my actual experiments.

My study of the duty of water has led me to believe that you can very easily determine the approximate amount of water that is required for maximum crop production on the various crops on the various soils. And as some crops require more water than others, and as some crops have a tendency, namely, the alfalfa and the pastures, to increase in yield as the amount of water applied is increased, it has been made very plain to me that before you can determine how much water an irrigation project should have

a person must take into consideration the economic conditions which do and will surround that project. To illustrate: Five tons of alfalfa per acre might be produced with two and a half acre feet of water, if your land was very carefully prepared and you gave considerable attention to the irrigation. But if that alfalfa was only worth \$3.50 a ton the farmer might go broke if he could only have, say, two acre feet per acre for that alfalfa. But if he could get \$10.00 a ton for that alfalfa he could afford to put the expense into the levelling and into the attention to the water, to make the water go just as far as it possibly could. The same thing will hold true with grains or with orchards. In other words, a man can afford to pump water to extreme heights on orchards if he is getting a good price for his fruit, but he couldn't afford to pump and give lots of attention to his water on pasture ground that was far removed from a railroad.

By giving special attention to irrigation I mean having one irrigator for each forty acres.

It takes about twice as much water for pasture and alfalfa as it does for grain, orchards and potatoes. I don't know of any information, and I think if there was any I would know of it, that applies to a condition where the character of the land is an alluvial mountain meadow, at an elevation of from 5400 to 5600 feet, lying low along the banks of a stream, where the crop produced is natural grass used for pasture and the cutting of wild hay, and where the method of irrigation employed is by put-

ting dams in the river, or in the sloughs adjacent to the river, there being such sloughs leading from the river on to the land. None of my experiments have been conducted under such conditions, or conditions analagous thereto. Under those conditions I think there is no method by which the amount of water so diverted upon the land could be measured, because it gets a lot of it by capillary attraction, sub-irrigation laterally. It would be quite difficult in a flat country to measure the surface water. Water is measured under such conditions with a current meter. It is pretty hard with all those dams in there to get any accurate measurement at all; it is almost impossible. Where a flowing stream has a free "get-away" as they call it, you can measure that with a current meter, or with a weir if there is fall enough; but under those conditions it is almost impossible to get accurate measurements. Water that is overflowing land by means of a dam that raises the level of the water in the natural water course, could only be measured by getting the water for the whole project, by measuring the river where it entered this land and then by measuring a mile or so below and subtracting the difference. Of course there might be some coming in from the sides that you wouldn't get at.

CROSS EXAMINATION:

I have not made nearly so many experiments with regard to the use of water for pasture as for alfalfa. We have one pasture experiment between Caldwell and Nampa, and we had one for three years on the

Gooding experiment station. I have found from observation that pasture needs irrigation a little often-er than alfalfa. At the Gooding experiment station we had to irrigate our pasture about ten times a year. With ten irrigations a year there would probably be a little more soil moisture left at the end of the season than there was to start with. I am familiar with Bulletin No. 78, and approved it before it was published. On page 11 of that bulletin there was about five acre inches in it at the end of the season. Per cent. means about an acre inch in six feet of soil. It appears from this table that by applying 1.95 acre feet of water there was produced 5.3 tons of hay; by applying 2.6 acre feet of water there was produced 5.6 tons of hay. The use of 2.6 acre feet left in the soil more moisture by several per cent. than there was at the beginning of the season. I am inclined to think that the per cent. in the beginning of the season on that one particular plot is a little low. There might have been a little bit of error in the determination of it. Probably all of those plots were very nearly the same per cent. of moisture to start with in the spring. Sometimes there is a little error creeps in there because of an insufficient number of determinations over the field in the spring to get it absolutely accurate. It appears from plat 4 that by putting on 1.95 acre feet of water, which produced 5.3 tons of hay, we still had left at the end of the season more moisture than at the beginning. The water-taking qualifications of alfalfa and other grass crops can be developed; they will withstand considerable water.

If you keep on putting more water into the soil and leaving more in the soil in the fall than you had in the spring, the natural result will be, so far as the soil is concerned at least, to raise the ground water, and if you haven't an excellent drainage you will water-log the land and render it valueless in a very short time. That is the great problem on all irrigation projects. I have commenced an investigation of that problem at Twin Falls, on the south side of the Twin Falls tract. I have never had any tables showing the amount of moisture in the soil in a pasture at the beginning of a season and at the end of a season. I am quite sure there is a little error in that seventeen per cent., and it should be about the same as the others.

Plaintiffs thereupon offered in evidence page 11 of Bulletin 78, as Plaintiffs' Exhibit No. 31.

Mr. Bark (continuing) :

The grasses in the pastures in these experiments are Kentucky blue grass and white clover, meadow fescue, brome grass, red top, Italian rye grass and timothy. I never made any experiments with the native wild grasses found in the mountain meadows. From an economy of water standpoint and the proper method for the irrigation of pasture is what might be called frequent and light irrigations. Pasture is a shallow-rooted grass and you wouldn't need to soak it deep, but it needs it often on account of it being shallow-rooted and the surface dries out quickly. I have read the bulletins of Dr. John A. Widtsoe of the Logan Agricultural College; am not very familiar with

his work entitled "Principles of Irrigation Practice," published in 1914. Dr. Widtsoe is a recognized authority on the subject of irrigation. He is one of the leading authorities, but he goes pretty strong in some cases; at least I can't agree with him. The statement on page 23 of Dr. Widtsoe's book that "it is seldom possible to apply at one irrigation less than two inches and practically impossible to apply more than ten inches unless the soil be very gravelly. The practical limits are yet narrower. A light irrigation is about three inches, a heavy one about eight inches, and an average one from five to six inches," conforms to my experience. That is acre inches in depth. The irrigation will begin about April 1st and extend to September 30th, possibly one in October, or late in the fall. They would be evenly distributed throughout the summer, although a little closer during the hotter part of the season in June, July and August, particularly after the first of July. That method is adopted on pastures that are grazed continuously during the summer time so as to keep up the growth of grass. I don't think it would require as much water, although I don't pose as an expert in that particular line, to produce a growth that was to be grazed off after the summer range has been exhausted, as it would if you had stock upon it all the time. That is only a matter of reason; I have made no experiments. It usually takes a little less water where the altitude is higher; there isn't so much evaporation, cooler nights and the season is shorter. There are some investigations upon the amount of water re-

quired for raising natural grasses; I have never made any of that kind. As I got the question there was no expert knowledge as to how much it would take when the stuff was irrigated rather helter skelter by running it down these coulees and damming it up and running it sidewise. There are some experiments as to the amount of water required for raising what are called the natural grasses or wild hay grasses on bench land and farms, about the same as alfalfa or other pasture would be. I can get some from Colorado and a little of it in Wyoming. If the low lands should be watered in the same way that the uplands are watered, the grass would grow, but it would require sometimes on these lower lands so much more levelling. You have got to do an abnormal amount of levelling, and these old cattle men dont' like to do it. I haven't done any experimenting on that kind of land. We are starting on that kind in Southwestern Oregon now, but I am not very familiar with it yet. I have never seen any scientific literature upon the question of whether or not it is necessary to have the water flowing over or standing on wild hay land all the time. I feel very positive that the old fashioned rye grass itself would not make that necessary, but if they have been using that type of irrigation for years, a grass would naturally spring up there which would acclimate itself to that kind of a condition, and they would have to keep it going then in order to raise that particular kind of grass. Some grass will withstand lots more water, these slough grasses, than the rye grass and the timothy and these upland

grasses that we raise. In other words, timothy or brome grass would not grow there because there would be perhaps too much water for it, and yet the other grasses that had sprung up there probably make very good pasture and very good hay, rich in feeding value, and had sprung up there because that particular type likes those conditions and has become acclimated to it.

RE-DIRECT EXAMINATION:

If the lands were levelled up very nicely so that the water could be applied, a very light surface irrigation each time, I am quite positive that it would take less water in that case than it would in its natural state where the land was more or less rough and rolling and didn't have to be pulled up so much in the first case.

W. G. GREATHOUSE, duly called and sworn as a witness on behalf of defendant, testified as follows:
DIRECT EXAMINATION:

I reside at Elko, Nevada; am County Recorder and ex-officio Auditor of that county. Before going to Elko County I resided at Ruby Valley. I was engaged in ranching there. I became familiar with the lands of the defendant in this case in the summer of 1884. My first duty was riding after cattle for the four years I was there. In one outfit there would be some eighteen or twenty thousand cattle. I hayed at the Vineyard ranch in the summers of 1884, '85, '86 and '87. There were ditches on the Vineyard ranch in 1884. One must have come out of the Salmon River and one out of Jake's Creek. We put up about 100

tons on the Vineyard in 1884. We gradually put up more each year, but I don't know as I could determine the amount. I also put up hay at the Middle Stacks, which is ten or eleven miles down the river. There was an increase in the hay put up at the Middle Stacks between 1884 and 1887. That (indicating it) is Big Creek, on Defendant's Exhibit No. 10. I made a desert entry on land in Big Creek in 1885, in sections 11 and 12, being the southeast quarter of the northeast quarter, and the northeast quarter of the southeast quarter of section 11, and the south half of the northwest quarter and the north half of the southeast quarter, and the southwest quarter of the northeast quarter, and the northwest quarter of the southeast quarter of section 12. I proved up in 1888. I irrigated it by damming Big Creek and throwing the water out through ditches on the south side. As well as I can remember I could water the whole 320 acres of land. That land was all covered and the sagebrush also. It was all tillable land. There were ditches on the north side. There was a claim just above mine and it had ditches taken out on both sides, as well as I can remember. The claim belonging to Hannah Bartman, and the land under that entry was irrigated the same as my entry. We put in a rock and willow dam just below what they called the Cold Springs and threw the water out on the east side of the Shoshone, just above the Big Creek outlet. That was to cover the desert claim of Mr. Hewitt. The water was taken out and spread over the claim. A fellow by the name of Tesdell had a claim right south

of Hewitt's. I think the ditch that was taken out from Shoshone Creek was used to irrigate his land. Tinnin had a claim north of Hewitt's, as well as I remember. On Defendant's Exhibit No. 10 Hewitt's desert land claim must have been in part of section 10. Tesdell's was south on Shoshone Creek. Tinnin's was north, lying up the river on Shoshone Creek. The other claims adjoining mine was extended up towards the head-waters of Hannah's fork of Big Creek. Those desert claims were irrigated by the waters of Big Creek and Shoshone Creek. The waters of Big Creek were used to irrigate my land and the claims just above, and the waters of Shoshone Creek were used to irrigate the three desert entries I mentioned as being on Shoshone Creek. These desert land entries were irrigated in 1888. Big Creek is a tributary of Shoshone Creek. Prior to going to Elko I was ranching in Ruby Valley for three years. I raised crops on about a thousand acres. The system of irrigation was by flooding.

CROSS EXAMINATION:

I couldn't say how many acres there were in the Tinnin entry, the Tesdell entry or the Hewitt entry. It was my intention to irrigate 320 acres. We had to prove up on the land, and simply scattered the water to cover 320 acres. I was not raising any crop on any of it during the time I held it. Neither did Mr. Hewitt, Mr. Tesdell or Mr. Tinnin. Pretty nearly all of it was meadow land; part of it was covered with sagebrush. I did not clear the sagebrush. Tinnin's land was natural meadow and some sagebrush.

No improvements were made, except what I have described, and it was used for pasture. It was substantially in the same condition when I left it as when I found it, except some ditches or some dams had been put in. It was something similar to the kind of land that I found on the Salmon River and Middle Stacks and Vineyard. It was farmed and used in about the same way. I cut no hay on the Shoshone Creek ranches or on the Big Creek ranches. In 1887 we put up about 100 tons at the Middle Stacks. In 1887 at the Vineyard ranch we cut all the hay above the ranch house; some from the ranch house up toward the Hubbard; I couldn't say just how many acres. I don't think it was 300 acres; possibly 200 acres, but I won't say. On Middle Stacks we cut considerable area. The hay was not so good and of course we cut a larger area in order to get more hay. In the low lands the hay was heavy and up a little higher it wasn't so heavy. I don't think we cut as much as we did at the Vineyard ranch. I suppose it would run a ton or a ton and a half to the acre. We picked out the best spots; some rye grass. They irrigated the land, but you might say they didn't have any system. Bottom lands don't sub-irrigate from the river; they threw the water out of the river. Without dams in the river the bottom lands wouldn't sub-irrigate very much. I don't think you would have to make a well very deep to reach the soil water; possibly eight or ten feet deep. From my experience in that country it requires irrigation to produce crops; you have to flood it. When I did the

work over there on my desert land claim and took the water out I expected to create a pasture.

RE-DIRECT EXAMINATION:

When I say that irrigation was necessary for a crop I didn't mean simply that you get a larger crop by irrigation; I mean you have to irrigate it if you get a crop, absolutely. Before we commenced to irrigate it the land did not produce a crop. They were too wet for sagebrush and there was pretty good pasture on them, growing native grasses. In 1884 to 1887 I was in the Salmon River valley down to the Bore's Nest. This water was thrown out at that time above and some of it would naturally reach this land and perhaps at that time there could be some portions cut, but that which it did not reach didn't produce a crop. Wherever the water reached the land we could cut a crop of hay. Where the water didn't reach it there would not be what you would call a crop.

RE-CROSS EXAMINATION:

It was not being cut for hay before the irrigation system was put in. The dams were in above Middle Stacks when I first knew the country. I was not on the river before the dams were put in and I am in no position to compare the condition it was in before the dams were put in with what I saw afterwards. My judgment is drawn from the natural lay of the country and the lands water did not reach and the grasses it was producing at that time. I could readily tell in cutting the grass parts the land that the water did not reach at all. Any man who is fa-

miliar with the meadow lands and irrigation can absolutely tell the grounds that have been irrigated. If there is an acre or two or ten acres here that the water don't reach, you can readily see that the grasses are not there, and then the ground itself, the soil, will tell you whether the water has been applied. You can tell with your natural eye.

RE-DIRECT EXAMINATION:

There was a fellow by the name of Taylor Simpson to look after the water at the Middle Stacks. He irrigated the Vineyard ranch in 1884.

EXAMINATION BY THE COURT:

In places the banks of Salmon River are probably three or four feet high, but in the spring of the year when flood water comes very often the stream will overflow. The flood water ordinarily comes in June, and would run out into the sloughs. On my claim we did not take the water out until 1888 for the purpose of proving up. Later they undertook to produce a crop by the use of the water, but I never did. I disposed of the land soon after I got title to it and before I got patent.

MR. BOYD: Possibly at this time, your Honor, I can put in a stipulation that has been agreed to by both parties, in connection with Exhibit No. 1, Defendant's Exhibit No. 1. The lands owned by the defendant company in the State of Nevada—It is stipulated and agreed between the attorneys for the plaintiffs and ourselves that the date of the deed to these lands from the Sparks-Harrell Company to the defendant company here is the 31st day of October,

1908, and it is further agreed, for the purpose of the record, that these deeds, or this deed, contains the following provisions:

“Together with its right, title and interest in all water, water rights, water locations and canals or ditches used, or intended to be used, to irrigate said lands or any part thereof.”

Has Exhibit 10 been admitted?

THE COURT: Yes.

MR. BOYD: Then it is stipulated, so far as Exhibit No. 10 is concerned, that the lands shown on there as belonging to the defendant company, and which are surrounded by the rather heavy slashed line, are lands conveyed to the defendant company from its predecessor, the Sparks-Harrell Company, and that the deeds for these lands contain the same provision as to the water rights.

THE COURT: That is the deed from the Sparks-Harrell Company to you?

MR. BOYD: To the defendant company here. The deed to these lands bears date the 27th day of July, 1910. The actual deeds, the dates of the deeds. And, as I say, the defendant company is the owner of these lands as shown by these deeds and by the abstracts. We intend by the stipulation to cover all the lands shown on this map which are covered by the heavy slashed lines around the sections or quarter sections, and I think that will be possibly sufficient for identification.

THE COURT: That is on Defendant's Exhibit 10?

MR. BOYD: Yes, Defendant's Exhibit 10. There are quite a large number of segregated tracts on this map. We may desire possibly later, so far as these lands are concerned, to read the descriptions into the record, if there is any question about the amount to be covered.

THE COURT: That is, there are some tracts upon the map which have not been testified to as yet?

MR. BOYD: Yes.

THE COURT: You have had testimony as to only five tracts?

MR. BOYD: Yes, there are some tracts on the map that we don't claim any water or any irrigation of. But all the water claimed by us is within the tracts shown on the map.

JAMES B. STEELE, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I reside at Rogerson, Twin Falls County. The first work I done on the San Jacinto ranch was in 1894, putting up the alfalfa crop. There was about forty acres located on the west side of the land, just opposite the ranch house. We were there haying on the river five or six weeks, as near as I remember it. That piece of alfalfa lying west of the house and the land lying down the river on the east side of the valley, towards the Bore's Nest, was in cultivation and being irrigated at that time. I was there the next time in 1898 and was haying at the Middle Stacks about five or six weeks. When I got done at the Middle Stacks they sent me to the Bore's Nest and I

mowed a field down there. All told, I was there probably a month or six weeks. I worked for them continuously from the haying in 1898 until June, 1901. All of this entire section that I have spoken of below San Jacinto and to the Bore's Nest was under cultivation during those years. Mr. Moore, who is dead, had charge of the irrigation. I was at the lands of the defendant on Big Creek on the Idaho side in 1901 for the first time. The last time I was there was two years ago this coming May. The land in section 7, on Defendant's Exhibit 10, was fenced at that time. There was some ditches taken out there and the water was running in them at the time. As near as I remember it there was various ditches taken out of the streams as you went down from the upper end of the valley. When I was there two years ago this coming May there were ditches running and the land was being irrigated. If my memory serves me, the ditches were in about the same places as in 1900. They were old dams that were in the creek.

CROSS EXAMINATION:

I raked the alfalfa crop in 1894 in July. It was the first crop of the season. I don't know whether there was a second crop or not. It was not cut while I was there. I left sometime the latter part of August. We cut some hay below the house on the San Jacinto ranch on both sides of the river. The island is on the east side and we cut on both sides of the west channel.

We cut nothing east of the island that year. I don't know how many acres we cut over or how many

tons we put up. In 1898 we put up hay at the Middle Stacks and on the Bore's Nest field. I don't know how many acres we cut or how many tons we put up. I worked there all told about a month or six weeks. Mr. Moore had an outfit of several men. When I went to the Bore's Nest there was three of us there at that time. We didn't stack the hay; we just rounded it up in piles and took stakes and stuck them in the top of it so that the cows would find it in the winter time.

L. W. BEASON, called as a witness on behalf of defendant, and duly sworn, testified as follows:

DIRECT EXAMINATION:

I will be twenty-seven years old next month. I am an engineer and was graduated from the Massachusetts Institute of Technology with the degree of Bachelor of Science, in June, 1913. I have been engaged in surveying construction work and irrigation work ever since graduating. I made measurements of the ditches constructed on the defendant's property at different times in 1914. I have the notes from which I can give the capacities of those ditches in second feet. Starting with the ditches at the upper parts of the tracts in question, the first ditch is diverted from Dry Creek in the southwest quarter of the northwest quarter of section 11, 47 north, 63 east. It is seven feet and a half wide on top, is V shaped, and the deepest place is a foot and a half deep. The grade is four feet per thousand feet of length. The length of the ditch is 7,000 feet, and the capacity is 3.9 second feet. The next ditch is diverted from

Jake's Creek in the southwest quarter of the southwest quarter of section 3, 43 north, 63 east. It is 3 feet wide and 1.7 feet deep. The grade is two and a half feet per thousand feet of length. It is 5,300 feet long, and the capacity is 5.7 second feet. There are two ditches diverted from Jake's Creek at the upper end of the Vineyard ranch which I am unable to compute the capacity of because there are no straight sections in them anywhere. The next ditch is known as the Harrell ditch, on the Vineyard ranch. It is diverted from the Salmon River in the northwest quarter of the northeast quarter of section 16, 44 north, 63 east. The top width is 9 feet; bottom width 4 feet; depth 2 feet, and the grade is a foot and a half to the thousand. The length where it crosses Jake's Creek is 4,400 feet, and the capacity is 15.3 second feet. The next ditch, known as the Bird's Nest ditch, is diverted from Salmon River in the southeast quarter of the northeast quarter of section 20, 45 north, 64 east. The top width is $22\frac{1}{2}$ feet, bottom width $15\frac{1}{2}$ feet; depth 4 feet; grade 3 feet per thousand. The length of the ditch is 19,700 feet. This ditch will carry as much as 150 second feet without overflowing the banks, but a ditch of that size and grade I don't think would carry that much water without washing. I think it will carry $68\frac{1}{2}$ second feet safely. The next ditch is known as the Harrell ditch on the San Jacinto ranch and is diverted in the southwest quarter of the southeast quarter of section 9, 45 north, 64 east. The top width is $10\frac{1}{2}$ feet; bottom width 6 feet; average depth is 3.2 feet,

and the grade is one foot per thousand. The length is 3.4 miles, and the capacity is $19\frac{1}{2}$ second feet. This is not the same ditch as the Big ditch, or the Harrell ditch, sometimes referred to as the Harrell ditch. The Big ditch is diverted in section 34, 46 north, 64 east. The top width is 21 feet, bottom width 16 feet; depth 5 feet; average grade .56 of a foot per thousand. The length is 8.7 miles and the capacity is 90 second feet. The next ditch is the Middle ditch at San Jacinto, diverted from the river in the southeast quarter of the northeast quarter of section 27, 46 north, 64 east; the top width is 10 feet; bottom width 6 feet; depth $2\frac{1}{2}$ feet; grade one foot per thousand; length 4.3 miles, and the capacity is 24 second feet. The next ditch is the Warm Springs ditch from the spring in the northeast quarter of the southeast quarter of section 22, 46 north, 64 east. The top width is 9 feet, bottom width 6 feet, depth 2.8 feet; grade half a foot per thousand; length $1\frac{3}{4}$ miles, and the capacity is 6.6 second feet. The next is the Rainwater ditch, heading in the northeast quarter of the northwest quarter of section 23, 46 north, 64 east. The top width is 18 feet; bottom width 15 feet; depth $3\frac{1}{2}$ feet; grade $3\frac{1}{2}$ feet per thousand; length 1.2 miles, and the capacity is 66 second feet. The next was known as the Gray ditch, heading in the northwest quarter of the northeast quarter of section 11, 46 north, 64 east. The top width is 11.4 feet, bottom width 8 feet, depth 1 foot, grade 1 foot per thousand, length 6,000 feet, and the capacity is 6.3 second feet. The next is the Fisher

ditch, and the present head of it is in the northwest quarter of the northeast quarter of section 14, 46 north, 64 east. The top width is 9.3 feet, bottom width 3.6 feet, depth 2.5 feet, grade $2\frac{1}{2}$ feet per thousand, length $2\frac{1}{2}$ miles, and the capacity is 21.3 second feet. The next is known as the East Bore's Nest ditch, diverted in the northeast quarter of the southeast quarter of section 35, 47 north, 64 east. Top width is 9 feet, bottom width 5 feet, depth 2 feet, grade a foot and a half per thousand, length two and a quarter miles, and the capacity is 10.8 second feet. The next is known as the Bridge ranch ditch, diverted from Shoshone Creek in the southeast quarter of the southwest quarter of section 17, 47 north, 65 east. Top width is 15 feet, bottom width 7 feet, depth 3.6 feet, grade half a foot per thousand, length 2.4 miles, capacity 14.7 second feet. The next ditch is up in the Shoshone Basin and is diverted from Shoshone Creek in the northeast quarter of the northeast quarter of section 3, township 16 south, range 17 east, in the State of Idaho. The top width is 6 feet, bottom width 3 feet, depth 2 feet, grade a half a foot per thousand, length 1.6 miles, capacity 5 second feet. This ditch appears on Exhibit 10. The next ditch is diverted in the southwest quarter of the southwest quarter of section 11, 16 south, 17 east, from Big creek in the State of Idaho. The top width is 7 feet, bottom width 4 feet, depth one and one-half feet, grade 1 foot per thousand, length 1.8 miles, capacity 4 second feet. The next ditch is diverted from Trout Creek in the southeast quarter of the northeast quarter of section

3, 44 north, 65 east. The top width is 4 feet, bottom width 2 feet, depth 1 foot, grade 4 feet per thousand, length 1 mile, and the capacity is 1.2 second feet. The total capacity of all of those ditches is 362.8 second feet. This does not include all of the ditches that were constructed prior to 1904. There is a lot of places along these various streams where the water has been turned out, but did not appear to have been used recently. I left those out, and wherever there were dams in the streams to turn the water out over the meadow, of course there are a lot of those, there is no way to get at the capacity. I haven't given the capacity of any of those sloughs or diversions not carried through ditches.

I have had made under my supervision maps showing the lands belonging to the defendant on Salmon River and its tributaries that received benefit from irrigation. Defendant's Exhibit No. 7 is one of those maps. I was engaged about eight months continuously in making up maps of that character. I have checked up the work and can say of my own knowledge that these plats correctly represent the areas that were benefited by irrigation. Defendant's Exhibit No. 7 includes the lands on Trout Creek, a little east over the mountain from San Jacinto, and about 12 miles by road from the High Line ditch. I went onto the lands myself to make observations for the purpose of determining how much of those lands received benefits from irrigation. On Defendant's Exhibit 7 there is an area colored dark green which is good hay land. There are other areas colored a light-

er green, which I classed as first-class pasture. The areas are marked on the exhibit. There is no land in the colored portions that does not receive benefits from irrigation.

Defendant's Exhibit No. 7 was thereupon offered and received in evidence.

Mr. Beason (continuing) :

Defendant's Exhibit No. 11 covers all of the Hubbard ranch, all of the Vineyard ranch, and the Salmon River valley or canyon, above Contact, down to the Bird's Nest. That was made up in the same way as Defendant's Exhibit No. 7. On Defendant's Exhibit No. 11 the hay land is colored dark green and the pasture land is colored light green. There are no lands in those colors that do not receive benefits from irrigation. The colored areas are drawn to a scale and the areas are marked. The total acreage as shown in dark green on Defendant's Exhibit No. 11 is 866.7 acres; the total acreage shown in light green, or pasturage, is 1728.3 acres.

Defendant's Exhibit No. 11 was thereupon offered and received in evidence.

Mr. Beason (continuing) :

Defendant's Exhibit No. 12 covers the Salmon River from the Bird's Nest to the Bore's Nest, including the lower end of Trout Creek. The dark green shows hay lands; the light green shows pasture lands. The yellow shows lands that had been planted in grain at the time we made the survey. The orange shows land that had been seeded to timothy. The lands colored gray I have called second-class pasture.

As first-class pasture I have included land upon which a very heavy growth of grass grows, probably with scattering willows in places, and the willows may be fairly thick. As second-class pasture I have classed that land upon which grass does not grow so heavy; it is more scattering. Usually most of that second-class pasture has a scattering growth of wheat grass on it. The irrigation upon the two classes of pasture is practically the same. The area of the first-class pasture land on Defendant's Exhibit No. 12 is 2,501.2 acres; second-class pasture 1,073.7 acres; hay land 1,766.2 acres; grain, 1,481.7 acres; seeded to timothy, 242.6 acres. The plowed land is not colored. There are none of the lands marked as meadow lands, or first or second-class pasture lands, on Defendant's Exhibit 12, that have not received the benefits of irrigation. Last fall we measured the plowed land that is not shown on Defendant's Exhibit 12 and there were 1,205.4 acres. 281½ acres of this was under the Big ditch, south of the San Jacinto lane. The remainder of the plowed land is all under the Big ditch.

Defendant's Exhibit No. 12 was thereupon offered and received in evidence.

Mr. Beason (continuing):

Defendant's Exhibit No. 13 was prepared in the same way as the other exhibits and includes part of the lands known as the Bridge ranch. The hay land is shown in dark green and the pasture land in light green and the grain land is shown in yellow. There are 428 acres of pasture lands, 124.8 acres of hay

land. The total land in grain is 27.3 acres. Defendant's Exhibit No. 14 was made in the same way as the others, by actual survey. The lands on Nall Creek are shown on that exhibit. These lands are a little northeast of the Hubbard ranch. Nall Creek is a tributary of Jake's Creek. These lands are about 7 or 8 miles from Jake's Creek. The dark green is hay land and the light green is pasture land. There are 53.4 acres of hay land, 104.3 acres of pasture land. Defendant's Exhibit No. 15 was prepared in the same way, from actual surveys of the irrigated lands shown upon that plat. These lands are up in what is known as the Shoshone Basin, in Idaho, just across the state line. This is Big Creek flowing down through sections 10, 11 and 12, 16 south, 18 east. Shoshone Creek flows down the left side of the map, almost due south. It is labelled Shoshone Creek. The dark green denotes hay land, and the light green denotes pasture land. There are some yellow spots that denote grain land that doesn't belong to the Company. There is 162 acres of pasture in sections 23 and 24, 15 south, 18 east, and 103 acres of pasture in sections 26, 27, 34 and 35, township 15 south, range 17 east. There is 41.7 acres in sections 3 and 10, 16 south, 17 east, and 528 acres in sections 10, 15, 11 and 22, township 16, range 17 east. On Big Creek there is 127 acres of hay land, 35.3 acres of pasture land in sections 11 and 12, 16 south, 17 east, and 44.7 acres of pasture in sections 7 and 8, 16 south, 18 east.

Defendant's Exhibits No. 13, No. 14 and No. 15 were thereupon offered and received in evidence.

CROSS EXAMINATION:

The first time I worked for the company was in the summer of 1910. My father is superintendent of the ranch. The ditches that I have referred to and given the capacity of were those that were in existence in 1904 according to the testimony that I have heard given here. Of course the Big ditch has been worked on since 1904 and extended in length. I took the cross section of the Big ditch near the head of it, and the capacity is based on the cross section and grade I took at that point. I made current meter observations in the Big ditch, the Harrell ditch on the San Jacinto ranch, the Bird's Nest ditch, the Rainwater ditch, Warm Springs ditch, Fisher ditch and the Bridge ditch in October, 1914. The capacities I have given are not based on those current meter measurements. I haven't the current meter measurements with me in the court room, but I can produce them. The land extending from the lower part of the dark green area on Defendant's Exhibit No. 11, shown as a narrow strip of green, was surveyed and the area computed. In the place where the creek crosses the lower part of the section line of section 36, 45 north, 63 east, I think we took the width of the channel and added that to the area of pasture land. We did not include the width of the river channel in all measurements. We platted the land and then measured the area on the map with a planimeter, and from that calculated the acreage. The map is drawn to a scale at the place to which you call my attention, and the green represents land that has got good grass

growing on it. At that place it is four or five hundred feet wide and the river channel is included. I located the exterior edge of the grass line on both sides of the river, and platted it on the map. Then I measured the area on the map with the planimeter. I got the width of the irregular light green strip which represents pasture lands at the various points where the width varies. We took data from which that width can be obtained, and made measurements. We didn't actually measure the width at any point. We located the outside edge of that pasture land all along the river with reference to the Government corners, platted it to scale, and measured the area on the map in square inches, the map being platted to a scale; so many square inches of area on there represent so many acres of land. We measured the area of that land in square inches, and from that figured the acreage. The number of places in each section that we took those measurements varies all along; at each sharp turn there has been a measurement made from a point known as a transit point. Here is a place in the northwest quarter of the southwest quarter of section 31, marked transit point 74. That indicates that the transit man set his instrument at that point and measured the distance to a point on the base line, which had been previously chained out and tied to a government section corner. The point you indicate would be about 600 feet on his transit. When the transit man had measured the distance from his transit to the previously located point on the base line the rod-man on each side of the river gave

him readings with the rods, which gave him his distance from the instrument to a particular point on the edge of the pasture land. The man who was following the river channel gave the transit man readings at each important turn of the river. The transit man for each one of these points recorded the distance and bearings from his instrument to the point where the rod man was giving him a reading. This method isn't strictly accurate; the degree of accuracy depends upon the number of times that you make observations.

There is one ditch between what is colored green on the Vineyard ranch in section 11 and where the river is shown as passing out of the map in section 21. It is diverted from the left side of the river in the southeast quarter of the northeast quarter of section 20, 45 north, 64 east. It is about five miles from the dark green in section 11, to the head of that ditch. Throughout that entire distance there is not a single ditch nor constructed irrigation works of any kind. That strip was colored green because it has got good pasture grass on it. Not all of the green represents irrigated land. I think that is the longest strip of which it is true that the green does not represent irrigated lands. There is a narrow place along the Shoshone Creek. I don't think of any such cases from the Bird's Nest to San Jacinto. The strip referred to below the Vineyard ranch is not entirely covered by willows. There are scattering willows along there. There are scattering willows and large

bunches of willows all along the river. They are included in the pasture lands.

I didn't measure the area under the various ditches that I referred to, so I cannot give the number of acres under the several ditches. In determining the capacity of the ditches I measured from the highest point on the lower bank to the average bottom of the ditch. I found that the ditches had an uneven bottom. I run a profile, about a thousand feet along each ditch, and took the average grade. To get the cross section I took the surveyor's level near the point of diversion in each case. The capacity of the ditch from the point of diversion to the first diversion out on the land is about the same in these sections. All those old ditches vary more or less in cross sections and I took what I thought would give a fair capacity. The average grade and the smallest cross section determines the capacity of the ditch. I took the smallest cross section between the point of diversion and the first diversion onto the land. I didn't take any sections after any water had been turned out on the land.

RE-DIRECT EXAMINATION:

In selecting a place to make measurements I wanted to get a section by which I could determine the maximum amount of water which could be diverted from the river into the ditch. If the ditch varied, I would take the smallest section I could find. In some of the ditches it don't vary, but wherever it did vary I took the smallest section. If I had a little time I could go through these various exhibits and select

out all of the areas and compute the number of acres included on all of the lands like the one to which my attention has been called between the Vineyard ranch and the Bird's Nest, upon which there are no dams or constructed diversion works.

MR. NEBEKER: I think I will withdraw the withdraw the witness at this time, if the Court please, that is, I would like to have an opportunity to have the matter cleared up in the record.

THE COURT: Before he does that:

THE COURT:

Q. You simply surveyed these lands in order to make these plats, you selected the outer edges of the tracts that grew grass or pasture, did you?

A. Yes, sir.

Q. Without any regard to whether or not it was irrigated?

A. Yes.

Q. You didn't make any examination to see whether it was irrigated or not? You simply took the place where grass was growing?

A. Yes.

Q. How can you tell, then, what parts have been irrigated and what have not. You answered counsel on cross-examination that you made no calculation or computation of the amount under the ditches. Do you know what land is under the ditches?

A. I can pick them out on the map.

Q. You didn't make the survey of them?

A. I didn't measure the area of them.

Q. I hardly see how you are going to do this, then.

THE COURT: Mr. Nebeker, I hardly see how he is going to do this if he didn't measure the area.

MR. NEBEKER: I didn't understand that point, your Honor.

THE COURT: He states that he didn't measure the areas under the ditch. I understood him to answer originally, and I think he did so answer, that these colorings upon this map showed the land which had been benefited by irrigation. Now, as to that he can't say what lands are susceptible to irrigation from the ditches, for he never made any survey.

MR. NEBEKER: I doubt if the witness intended to say that. I would like to inquire.

THE COURT: Isn't that what you meant to say, sir?

A. I don't believe I understood you right.

THE COURT:

Q. Did you ever make a survey of the lands to see what ones are under the ditches, susceptible of irrigation from the ditches?

A. All of these surveys show the lands under the ditches.

Q. How do they?

A. You can pick them out on the map.

MR. NEBEKER:

Q. Are the ditches shown upon these exhibits?

A. The ditches and the lands are shown on the exhibits.

THE COURT:

Q. But they are not contour maps, are they?

A. No.

Q. You can't tell whether the land is irrigable from a ditch unless you know the height of the ditch and the land. How could one of us, who were not present when this data was gathered, how could we take one of these maps and determine what lands are under the ditch and what are not under the ditch. Those ditches might be lower in altitude than any of the lands adjacent.

A. I think I can pick the areas out myself that are under the ditch.

Q. How can you do that?

A. Because I have been on the land and seen it, and I know what land is irrigated from each ditch.

Q. You would simply do that from memory?

A. Yes.

Q. You have made no survey of it, apparently?

A. Not actually to determine the amount of land under the ditch.

THE COURT: That is all.

MR. NEBEKER: That is all.

THE COURT: There are one or two further questions that I desire to ask this witness.

THE COURT:

Q. After having the cross-section of these ditches and what you call the average grade, how did you make a calculation as to the capacity of the ditch available capacity?

A. There is a formula given in the hand book of the American civil engineers, hand book, by which such capacities can be calculated.

Q. That depends somewhat upon the nature of the ditch, does it not?

A. Yes, on the condition of the channel, whether it is grown up with grass or whether the soil is in good condition or soil in poor condition.

Q. After selecting the point where you would make your cross-section, how did you get this average grade? Did you take the grade of the ditch throughout its entire length.

A. No, I took the readings of the elevation of the bottom of the ditch for points 100 feet apart, beginning two or three hundred feet above the section, running usually about 1000 feet to a point below the section.

Q. And you in that way would get the capacity of the ditch at that particular point?

A. Yes.

THE COURT: That is all.

JOSEPH JENSON, duly called and sworn as a witness on behalf of defendant, testified as follows:
DIRECT EXAMINATION:

I reside at Salt Lake City. I took my degree from Harvard University in 1902. Before graduating I had been teaching for a number of years at the Agricultural College of Utah, and I continued that work thereafter for some years. I had charge of the engineering department, including courses in civil, mechanical and irrigation engineering, until the spring of 1907, and then I went into practical work as a civil engineer. Since that time I have carried on my profession almost entirely within the State of Utah,

along the lines of reservoir, dam and canal construction and work incident to irrigation projects. I have constructed reservoirs for the State of Utah and for private parties. I was engaged in that work for the State of Utah for seven years. I have had to report on a number of irrigation projects as to their feasibility. I have been associated in experimental work in connection with irrigation subjects at the Agricultural College and I have done considerable farmers' institute work along that line. I have not studied soils as an element of fertility particularly. I have studied soils and earth material with respect to their permeability and with respect to seepage conditions and so on. I have devoted particular attention to the movement of underground and percolating water. I believe that I have read the standard recent literature on the subject. I visited the San Jacinto ranch the first time last November. My purpose was to observe the drainage and seepage conditions. My attention was directed more particularly to the land under the High Line canal. I was there one week. I had two lines of pits dug across the fields below the High Line canal, along the line of the greatest declivity between the High Line canal and the Salmon River bottom. The distance between these points was in the neighborhood of 9,000 feet. My purpose was to examine the condition of the sub-soil with the view of determining the seepage properties of that area between the canal and the Salmon River bottom. I had a profile line surveyed along the line of pits, but I didn't do it personally. The bottom of the

High Line canal on the north line of pits is 95 feet above the surface of the water in the river. There is a slope there of about 95 feet in the 9,000 feet of distance. It is gradual for a distance, then it is a more abrupt incline down on to the river bottom and then it is nearly level for some distance. I found in every pit along the line coarse sand and gravel underlying the surface sub-soil. We penetrated this from four to six feet as a rule. In the pits nearest to the High Line canal we found no gravel or sand but a sort of pumice stone structure, virtually a lava ash that has been cemented. We struck that about 20 feet below the surface. Above the canal this formation appeared two or three feet from the surface. I assumed a line as determined by this pit below the canal and the pits that we dug above the canal, and extended that line to the elevation of the river bottom. On this assumption the cemented material would extend away under the river bottom. This pumacious formation itself is porous, but the grains are very fine and the movement of water through material of that kind depends upon the size of the particles of which the material is formed. The movement of water would be very slow, practically negligible. Immediately above that formation there was coarse sand and gravel which is comparatively very permeable to water. From the investigation that I made there I formed the conclusion that that portion of the water thrown upon the ground for irrigation purposes between the canal and the river bottom would find its way readily to the river itself. I made a computation

according to the formulas as determined by experimentation on this subject, taking into account the slope and the nature of the ground through which the water would pass, and determined that water from the upper portions of the field would reach the river at the rate of about ten miles in one year. That is equivalent to 145 feet a day, very nearly.

I made observations about the place where the gauging station is located below the confluence of Shoshone Creek with Salmon River for the purpose of ascertaining the nature of the formation there. The subsoil was coarse sand and gravel for a distance down of about six feet. We struck the water at about two feet. There is undoubtedly a sub-flow there; it would be impossible to say how much, but I made a computation which showed that the sub-flow there should be at the rate of one second foot, or about that, for each four feet of depth of that soil across the gap of the canyon. This sub-flow would follow the surface stream in the same general direction down the canyon. Any barrier that would cut off the sub-flow would bring it to the surface. If the reservoir dam does that, it would certainly find its way into the reservoir.

During the same period that I was out there last fall and again last week, I observed the character of the formation immediately above the plaintiffs' dam. It consists of a series of layers of lava, some eighteen or twenty, probably more, distinct flows of lava. There is a very distinct line of separation, some debris and burnt material, ash, separating those

several flows. The same character of formation is at either end of the dam. It extends as far below the dam as I could see. I examined it for a distance of two or three miles. I followed the bottom of the canyon from the foot of the dam a distance of about two miles down the canyon. From my observations I formed the conclusion that the water in the channel below the dam comes around the ends of the dam through this lava rock. I observed markings on the rocks in the channel and along the sides of the channel, consisting of a fine silt deposit. There were marks indicating that the water in the reservoir had been up possibly 25 or 30 feet higher than when I was there. The difference in elevation of the water in the dam would certainly have something to do with the amount of water flowing around the ends of the dam and into the channel. In the first instance we have a greater area of those layers of lava that I have described exposed to the flow of the water, and at the lower depths an increased pressure, both of which would tend to increase the flow. I would say that the higher the water in the dam, the more would be the flow around the ends of the dam.

As to whether there is in lava rock customarily, in the joints and fissures, substances such as clay, that prevent the flow of water through it, is a condition which I have never observed and never heard of it until it was testified to here the other day. Assuming that there was such a thing as clay in the fissures, joint planes or other spaces, I would say that the flow of the water through those spaces would not have any

tendency to block them up so that the water wouldn't continue to flow. The matter is pervious to begin with; the wetting of it does not increase its density any; the gross porosity remains the same, even though the bulk of the material may swell some.

While on the San Jacinto ranch I observed that the water table was practically at the surface of the land there. In the fall of the year when I was there it was within about two feet. There is alkali in the soil there, and where that is so and where the land is located with reference to the water table as that land is, flooding of the land is necessary. Unless that is done the alkali will rise to the surface and kill any kind of vegetation that grows upon that class of land. So far as I know, where the surface of the land lies so near the water table, there is no method of irrigating such lands as that for the production of such crops as are grown on those lands, except by the flooding system.

CROSS EXAMINATION:

There might be some other system devised, but I haven't heard of it. On Defendant's Exhibit No. 12 I should say approximately the area that is colored in dark and light green is approximately 2 feet from the water table. When you get outside of the dark and light green area there is a slight bench or rise. It rises quite abruptly there to a height of perhaps 25 or 30 feet. By the flooding system I mean the water must pass over the surface of the soil. There are various methods employed by farmers for the purpose of getting water over the ground. There is

the furrow method, where the land is hilled up in furrows, usually 18 inches to two feet apart; that is commonly known as the corrugation system. The distance apart varies in different localities. The furrows are about four to six inches deep. As to the particular depth depends upon the character of the land. If the land soaks very well, you might make the furrows quite deep, if it is clay land. If it is sandy rough land it is better to keep the water near the surface. It is one of the chief purposes of the furrow system to keep a dry dust mulch between the furrows and not let the water get near the top, to prevent evaporation. Water will go downward through the surface soil, or sub-soil, on the land marked green or light green on Defendant's Exhibit 12, very slowly. It is a very fine, silty soil. I couldn't give those velocities off-hand without referring to the table. The surface soil would have a porosity of perhaps forty per cent; it comes in the same class as the clays. The depth at which plants feed upon the elements of the soil depends upon the plant. Even wheat and oats will feed at different depths, depending upon the moisture conditions and the soil. It is frequently the custom of farmers to keep the water off the ground so that the plants will develop a root system. It is considered a good practice, but they don't always do it. It is probably for the purpose of conserving the water supply and to make the plant go to a supply lower down. If put upon some plants, for instance wheat or oats, or any grain, early, it has a tendency to develop a root system near the surface.

I can't say from personal observation to what depth the roots of grain go. I have seen grain plants on exhibition that have shown roots ten feet long, dry farm grain, however. I have heard, but I couldn't say at this time, what the authorities on that subject say with regard to grain. It is a little out of my line. I think it could be safely assumed that grain plants will feed two or three feet below the surface on the ordinary farm. Alfalfa as a rule is a very deep-rooted plant and goes six, eight, ten or even thirty feet sometimes. I understand that they irrigate alfalfa pretty soon after it is planted. I am not an expert agriculturist; I do not wish to pose as an authority on those subjects.

Water does not flow by capillarity. The distance it would pass depends upon the fineness of the soil. The finer the soil the further it will come. Usually the clay soils have a higher degree of porosity than the sandy soils. I have heard of Hillgard on Soils. I think I have read some chapters of his book. I wouldn't say that I am familiar with Professor King on the Physics of Agriculture; not in the way of having made it a study. I am not a soil expert. I don't know that any experiments have been performed to show the speed with which water passes through the soil between corrugations in ordinary lava ash soil. My study with reference to the flow of water in the soil has been in connection with the underground sources of water and we were then dealing with long distances, laboratory experiments, which have shown that near the ends of the columns which

they have used for their experimentation, the rule is quite different from what it is after you get away from the ends of the column, and I should regard the distances between two furrows in a corrugated field as being so near together that the rule would not apply. If it was a long distance between corrugations, the velocity would depend upon several elements. It depends upon the grade of the water plane, upon the size of the soil grains, and upon the porosity of the soil. If you will allow me to give an illustration I can explain that better. The porosity of a pile of shot piled up in the form that you usually see cannon balls piled up, the most compact form in which spheres can be packed, if you take those same spheres and pack them in vertical rows, one on top of the other, so that each shot lies immediately above the other shot, we have not increased the size of the particles, but we have increased the porosity of the mass. One other element that I wished to mention in my answer, that helps to determine the rate of flow, and that is the temperature of the water. The four elements are concerned.

I have said that in my best judgment there would be about forty per cent. of voids in this top soil. That is the usual porosity of the clays. The porosity of sand is usually from 30 to 40 per cent; an average of 33 to 35 per cent. The porosity of gravel depends upon how much sand it has mixed with it. If it is clean gravel with no sand the porosity would be very high. If there is some finer material mixed with it, it is lower. It would vary over a considerable range. The

grains in this clay soil are very small and promiscuously packed together. If it is moved at all, it will be altered from time to time by the use of water. The tendency with the use of a lot of water is not that it would get closer and closer, but usually the reverse. If it is moved bodily by the water and redistributed, there would be no occasion to assume any change of porosity. The tendency of wetting the clay is to form a larger thicker filament around the clay particles and drive them apart. When it dries out it comes back to the original condition. Through clay soil the water moves slowly, but will move to great distances if it has a great deal of time in which to move. Gravity will pull the water down through the sands just as rapidly as in clay; capillary action is greater in clay than it is in sand.

Wild grasses grow upon the lands at San Jacinto. It consists of rye grass and a grass that I have usually heard called salt grass; also a broad leaf growing along the river channels in the wetter portions of the land. We found roots down in the soil where we dug the pits a foot or two deep. On the lands colored in yellow there is a foot to eighteen inches of very fine silty soil. Under that is another layer of the same general character except that it is partially cemented. This is an average of eighteen inches under the surface and extends for probably two feet on an average. It isn't what we call hard-pan in construction work. It is earth that lies below the frost line; it can be plowed, however. It is not so pervious to water as the top soil. I believe it is common in some sections

to find a layer of that kind in sagebrush land. I know certain sections where it is not. Below that is a layer of sand and gravel. We did not extend through it in any instance.

I could not say what year the silt or water marks in the canyon below the dam were made.

We didn't strike water in the land marked in yellow on Defendant's Exhibit No. 12. I don't know where that water table is.

EXAMINATION BY THE COURT:

The water table is the surface of the completely saturated soil. It is controlled by the character of the sub-soil or the impervious stratum underlying the soil and the elevation of the drainage channel and it always has an inclination upwards from the drainage channel. It follows in a general way the contour of the surface, except that the irregularities are modified considerably. The height or position of the water table is affected by whether or not the land is irrigated. After the application of water the elevation of the water table will be raised; it would depend somewhat upon the amount of water that was put upon the land. It will drain out after a long period of drouth and become very nearly horizontal.

RE-CROSS EXAMINATION:

I think the principal seepage in the Twin Falls country is between the layers of lava. The water might come out of the vertical cracks, but I would expect to find more seepage in the horizontal cracks. It is possible for water to get back into the canyon from the open cut at the upper end of the canal.

Through lava rock itself the rate of flow is so small that it is absolutely negligible. The lava rock, however, is usually full of blow holes and porous, and that isn't meant when you speak of the porosity of the material. It depends on the degrees of that, and the proximity of one blow hole to another as to whether water will go through those or not. I think water flows freely through those horizontal breaks and it is not likely to be stopped naturally. It would be natural for springs to form along the walls of the canyon after the course of time if the lands in the Twin Falls tracts were watered. When the water table rose in this district springs would begin to form in the Snake River canyon and might also form in the Salmon River canyon. I would expect that further down the canyon, but not above the irrigated lands.

THOMAS R. BEASON, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I reside at Ogden, Utah. I have charge of the Vineyard Land & Stock Company's properties in Nevada; have had for five years last December. During that time I have become acquainted with the tributaries of Salmon River, including the Shoshone Creek basin. I first became acquainted with them in 1910. I first irrigated the lands of the company in 1910. Nall Creek is seven or eight miles east of the Hubbard. In 1910 there were old ditches from Nall Creek that bore evidences of having been used for a considerable

time. In 1910 I irrigated about seventy-five to 100 acres on Nall Creek and it has been irrigated ever since that time. I did not measure the land. Nall Creek is a small stream. All of the water is used, every bit of it. There are two or three branches of it. The land irrigated is grass land, used for pasture. Nall Creek flows into Jake's Creek just below the Hubbard, but does not always run to where it empties in.

There were old ditches on Trout Creek when I went there in 1910; some were washed out quite deep. I think there were about 100 acres of land, and I continued to irrigate those lands in 1910. They bore evidences of having been irrigated prior to that time. It was just pasture land. We could cut it, but do not. It is about fifteen miles from where Trout Creek enters Salmon River. In the spring of the year the water of Trout Creek reaches Salmon River, but in the summer time it does not, especially when it is used for irrigation.

I became acquainted with the lands on Hot Creek and Big Creek in 1910. At that time there were old ditches on Hot Creek that bore evidences of being used for irrigation for a good many years. The acreage under irrigation there is about 75 to 100 acres. We raise nothing but grass. It is unenclosed. The method of irrigation is to turn the water out from the ditch onto the land at different places; something of the same general character as on the river property. It is the same system on Nall Creek and Trout Creek. There were old ditches on Big Creek

in 1910. I continued to irrigate the land from the same ditches. I fixed up the ditches some. Big Creek runs into Shoshone Creek. About a half mile by two miles of the land is fenced. Nearly all of it is irrigated. There is some high land on the north side of the creek that the ditches do not cover. With the exception of the very high places substantially the entire tract is irrigated. We cut some hay there. It has usually been kept for pasturage in the fall, but last year we cut hay. It is good grass land. The field on Big Creek, shown on Defendant's Exhibit No. 15, is in sections 7 and 12. The Shoshone fields are in sections 11 and 10, and this is a portion of the part marked in green. There would be about two sections of land that was being irrigated in 1910 from old ditches. I continued to irrigate with the same ditches. The general method of irrigation on all of these streams is by flooding the land, the same as in other sections. The Shoshone field is used for grazing land and pasture.

During the last five years I have also had charge of the Salmon River section, including San Jacinto, Middle Stacks, Vineyard and Hubbard. I have had charge of the irrigation of those lands. When I went onto the property in 1910 the Big ditch wasn't finished. The upper end of it was used for irrigating the land above the lane. There was some work done on the Big ditch in 1910, 1911 and 1912. It was finished to the present terminus of the ditch in 1912. The first year I was there the principal work on the ditch was from the lane up. There had been a flood

sometime in the year before that which had filled up considerable of the ditch and it took some work to clean it out. I done most of the work in clearing that ditch and then some little work was done in extending the ditch. We didn't raise anything but hay in 1910. We did clear a little brush below the lane for grain. In 1911 we sowed about 20 acres of grain there. We secured the water from the Big ditch. In 1911 we must have cleared five or six hundred acres, and I would say we put maybe a couple of hundred acres of that in grain in 1912. In that year we kept on clearing and had a thousand or twelve hundred acres, maybe a little more than that, plowed. In 1913 I sowed about 500 acres to oats and a little barley. In 1913 the total amount of land that was cleared and broken was seventeen or eighteen hundred acres, and in 1914 about seventeen hundred acres was sowed to oats. In that year we broke about twelve hundred acres more and have about 2700 acres plowed up and five or six hundred acres more that is cleared of sagebrush but not plowed. Last year crops produced on this land was mostly oats, and about 100 acres of barley. We had a hail storm that destroyed the biggest part of the crop. It came the day before we started to cut. We threshed out probably three-quarters of a crop. In 1913 we had a good crop of oats and barley. The average yield of oats was about 35 bushels to the acre. The barley was not so good, but I don't think we threshed it at all.

The head of the Big ditch or Harrell ditch was cleaned out after I went there, but the size of the

ditch was not increased. I have been in the cattle business on the range for forty-odd years. I commenced in 1869 on the Platte River, in Colorado, and I was in that country and Wyoming for a good many years. All my experience has been in the west on ranges using principally wild grasses such as we have on the ranges over there. Hay is put up for winter use and can be distributed a little better to stock than grass that is not cut, but so far as the value of it goes I don't think there is a great deal of difference between the hay and grass that is permitted to grow until it can be grazed off. The willows and brush, from a stockman's standpoint, constitute one of the finest shelters in the world. We consider willows very valuable for protection against storms in the winter time. There is good grass among those willows up and down the river. Since I have been in charge of the ranch I have not taken in any new lands on any of the ranches there, with the exception of that I have described under the Big ditch. There is a little at the Vineyard that comes under a ditch that has been finished since; that is the Tunnel ditch. Between the old ditch and the new ditch there is possibly 100 acres of land. We are using the same general method of irrigation, by ditches and dams that throw the water on the ground and flood it.

CROSS EXAMINATION:

We didn't irrigate the lands last winter; there might have been some water in the ditches for stock use. We flooded some of the lands at the Hubbard ranch last winter, but not any between Bird's Nest

and Bore's Nest. The water was shut out of the ditches last fall just before cold weather, in September or October. It was turned on this spring about the 1st of April, or maybe along in March. We commenced irrigation just as soon as we got the cattle out. That part of the Tunnel ditch that was constructed after I went there commences at the Jake's Creek crossing and extends down in a northerly direction. I completed it from Jake's Creek down to the present terminus; also from what is marked "Tunnel" on Plaintiffs' Exhibit 18 up towards the head of the ditch. The tunnel was not completed when I went there. We completed the tunnel and put in the head works of the ditch. The ditch is almost on a level with the river, and a few rocks thrown in the river, a rock dam. There is a board or head-gate to keep the water out of the ditch.

In 1910 the Harrell ditch on San Jacinto run down I would say about a half mile below the lane. It was not all completed to that point. We completed what was below the lane. The next year I built about three miles further. The water was not used as far as it was completed. I quit work late in the season. I don't remember how far down the used the water in that year. In 1910 I used water in the ditch as far as it had been constructed. In 1912 the ditch was completed to its present terminus.

I don't know how many acres of these different ranches were cut over for hay in 1910. I cannot state the relative proportion between hay lands and pasture lands. I do not remember the number of tons.

I made report of it to the head office at Ogden and it is a matter of record there. The lands on Shoshone Creek, called the Shoshone field, were farmed separate from the lands on Big Creek. When I referred to the Shoshone field I do not include the Big Creek lands. Nearly all of the land on the east side is under a ditch that comes out from a spring. I couldn't tell you the acreage under the ditch, but there is about two sections under fence. About half of it is under the ditch. It is used for pasture entirely. Last year for the first time hay was cut on the Big Creek lands. There is a half section inside of the fence and most of it is under the ditch; possibly 200 acres. The estimates of the acreage under the ditches at Hot Creek, Trout Creek and Nall Creek are not based on any measurements made by me. I couldn't tell how near they are; it is just a guess.

RE-DIRECT EXAMINATION:

We do not have water enough to irrigate very much in the fall and do not irrigate all of the lands up there after we cut the hay. Warm Springs Creek does not reach the river; it is used on the lands at all times.

There is a ditch just under the tunnel ditch that was used to irrigate the Vineyard ranch prior to the completion of the Tunnel ditch. It runs around the point up there. The tunnel ditch serves to irrigate the same land as this old ditch with the exception of 75 or 100 acres of new lands I mentioned yesterday. We still use the old ditch. With the new ditch we can use the water a little more economically; it is a

little bit higher. It is kind of hard to get the water out of the river in the old ditch. It was washed out right at the head. Aside from the new lands I mentioned the new ditch serves the same purpose as the old one.

RE-CROSS EXAMINATION :

Referring to Plaintiffs' Exhibit No. 18, the old ditch from Jake's Creek come out right close to where the new ditch crosses. It was right near that place. It don't show up on this map. There are two on each side of Jake's Creek that irrigate this land in here, and from this right in here. The one that comes out on the right-hand side as you go down the creek, runs nearly to the lower end of the field. The land in the lower end is cleared of sagebrush, but there is some sagebrush on the upper end. It is more what we call rabbit brush. We used those ditches all the time, every year. They are big enough to carry all of the water of Jake's Creek. There is another ditch from Jake's Creek down towards the ranch buildings. The meadow land runs close up to the tunnel ditch. There is some meadow between the tunnel ditch and the old ditch that has been cut over every year since I have been on the ranch. I do not know how much longer. There was some sagebrush and some meadow land between the old Harrell ditch and the Tunnel ditch. The lower end of it was meadow.

HENRY HARRIS, called and duly sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION :

I now live on Brown's ranch, in Twin Falls County, Idaho. I came first from Texas in 1884 to work for

Sparks & Tinnin. I went to the Vineyard ranch and was with the Sparks-Harrell and Sparks-Tinnin companies for 29 years. I cut hay on the Vineyard ranch from 1890 to 1913. I worked for the Vineyard Company two or three years. The Vineyard ranch was irrigated during all of those years for meadows and hay. I put up hay on the Hubbard ranch every year after 1890. I did not do the irrigation there. I did the irrigating on the Vineyard ranch every year, with the exception of two years, when I did it in a way. I was running the cow outfit and fixed up the dams and ditches and spread the water out, and then we had to go. Aside from those two or three years my time was spent in connection with the ranch, irrigating and otherwise taking care of it. Nall Creek is about seven miles northeast of the Vineyard ranch. There was a small pasture there in 1884. At that time two streams run into the meadow, one from the north and one from the east, and there was a little ditch taken out from the upper end that made the water spread over the meadow. We used it for pasture. It was irrigated during all the years I was there. Water runs from Nall Creek and Jake's Creek into the Salmon River, until it gets low in the summer.

I was at the San Jacinto ranch about the time the Big ditch on the east side was completed. I saw it the last time a few days before I came up here. As I remember it, the size of the ditch at the head was about the same when I first saw it as it is now. I could see where the ditch had been cleaned out.

At the Vineyard and Hubbard the pasture and hay lands were irrigated during all of the years I was there. I think Andrew Harrell died in 1907 or 1908.

CROSS EXAMINATION:

I did not have anything to do with the construction of the Big ditch; it was fully completed when I left there. I did nothing except suggest some patch work. The only work I did on the San Jacinto ditch was before time to work the stock. We would probably be down there fixing levees and things like that; willow dams. That would be only occasionally. The hay on the Hubbard and Vineyard ranches, one year when they told me it was measured, was something over 500 tons, I think. The Vineyard ranch cut the most hay. I would say something like 300 tons on the Vineyard ranch. In the early years they did not use as much hay as they do now, and they tried to cut a little more hay. I think it was 1912 or 1913 when the hay was measured. That was after the Vineyard Company bought the ranch. I don't think any land was irrigated on the west side of the river on the Vineyard ranch when I was there. I don't think we had any ditches on the tract, only from the overflow. I remember when the Tunnel ditch was built and I remember the ditches from Jake's Creek. There was hay cut between those ditches and the old ditch from Salmon River. It was right along Jake's Creek. Most of the hay was cut below the ditch from Salmon River, but there was one awful big piece that we cut between those ditches, and the rest of it was just skipping around, getting the best we could.

After we spread what water we could from Jake's Creek above the Salmon River ditch, of course the water all went down into the Salmon River ditch again and then it was scattered again below and went with the other water.

E. C. McCLELLAN, being recalled, testified as follows:

DIRECT EXAMINATION:

I have made a computation for the purpose of furnishing the Court with information as to the amount of additional acreage brought under irrigation between 1889 and 1904. I have made a table and have a copy of it. The first three columns in this table give the section, township and range of the parts under irrigation. The fourth column gives the number of acres irrigated in 1889 and the fifth column the number of acres irrigated in 1904. The total acreage under irrigation in 1889 appears at the bottom of the fourth column in the first table. That total is 4,178.4 acres. That includes only the lands between Bird's Nest and Bore's Nest. I have included in this table lands irrigated at the Vineyard ranch. The total of these lands appears in the fourth column. The area is 814.4 acres. The total of both areas is 4,992.8 acres on the Vineyard ranch and the Salmon River valley from the Bird's Nest to the Bore's Nest in 1889. There is nothing shown on the table for the Hubbard ranch or the Bridge ranch. The acreage under irrigation up to 1904 for the same properties is shown in the fifth column at the bottom of the second table. The last set of figures, that has

marked before it the words, "Total Irrigation in 1904," shows the total acreage under irrigation in that year, and it amounts to 5,981.2 acres. I have a detail on this table showing the location of the areas that were brought under irrigation between 1889 and 1904. The sixth column shows the irrigated areas under the new Harrell ditch, under the Bore's Nest ditch, and also under the Harrell ditch at the Vineyard ranch. The seventh column, giving the names of the ditches that the lands were under, and the eighth column gives the number of acres of land placed under irrigation since 1889, and the last column gives the names of the ditches that have taken out and that irrigated these different tracts of land. I made up the table from my own surveys and I have the data from which the table is made in case counsel should desire to see it. I can show the exact method adopted by me for the purpose of making up these totals. The areas showing the additional acreage between those two dates is correct with the exception that they are the gross areas from side to side of the valley. The river, with its meanderings through the different sections, would take up, as closely as I could estimate it, about ten acres to each section, or each mile through the valley. It would amount to about 130 acres and should be taken off to show the areas under irrigation. The channel will average about two-thirds of a chain, or forty-four feet, from bank to bank. It is seldom over 44 feet and in many places is less than that.

Said table was thereupon marked Defendant's Ex-

hibit No. 16 and was offered and received in evidence.

Mr. McClellan (continuing): The state lands I selected for the Sparks-Harrell Company and its predecessors, include practically all of the San Jacinto ranch property from the Bird's Nest to the Bore's Nest. The applications were filed in 1894 according to my best recollection at this time. There were none filed after that to my knowledge. Mr. John Sparks had the active management of these properties during part of the time. He was formerly governor of Nevada and is now deceased. I understand Mr. Tinnin is in Georgetown, Texas. I have not seen him in recent years. Andrew Harrell seemed to have the exclusive management of the properties after Mr. Sparks sold out. Between 1893 and that time they were managing the property together, seemingly. Harrell continued to manage the property up to the time of his death in 1907, so far as I know. I left the employ of the company in June, 1907. Jasper Harrell was the father of Andrew Harrell and is the man who originally claimed the Salmon River range. He sold out to Sparks & Tinnin in 1883. He is deceased.

CROSS EXAMINATION:

It was Jasper Harrell who afterwards became a member of the Sparks-Harrell Company. There was Jasper Harrell, Andrew Harrell and Martha Harrell, members of the company.

Aside from the work in re-building dams and fixing up head works of the ditches in 1904, I laid out

a little new work in the east half of section 2, 46 north, 64 east, under the Gray's dam H, marked on Defendant's Exhibit 5. The Gray ditch had been constructed about ten chains, and this was extended perhaps a couple of hundred yards further and another ditch taken out from the southeast of what is marked the Warm Springs Middle Slough, and carried northwesterly, dropping water into this same Gray ditch and its extension. The Gray's ditch does not extend from Gray's dam; it is just above Gray's dam a few feet. I do not refer to the ditch marked on Defendant's Exhibit No. 5 as Gray's ditch No. 1. The one I am referring to is simply marked "ditch" and is over the words, "Gray's Dam H," and marked 2 underneath. Gray's ditch No. 2, right above dam H, was built prior to 1889. Gray's ditch No. 1 was built in 1889. The land irrigated from Gray's ditch No. 1 lies between the ditch and the river. The data from which Defendant's Exhibit No. 5 is made was obtained in October, 1889. I have prepared another map identical with Defendant's Exhibit No. 5, only adding onto that in colors the new land. This map has not been introduced. It is my work map that I have had in the office, and by this I can tell you the different lands that have been added as new land in my table. On this map the lands colored in red and the land colored in blue indicate the lands under irrigation in 1889. The original of this map was prepared at the same time as Defendant's Exhibit No. 5. I have added lands to Defendant's Exhibit No. 5 in making this map for the purpose of finding out the

land that was placed under irrigation since 1889. I placed these lands on the map last evening and this morning from surveys I made in the past at different times. The first survey of Warm Springs ditch was made for location in 1889. The survey of Bird's Nest ditch was made in 1894. The ditch itself was laid out in 1893 and I located it the next spring by connecting it with government surveys so as to see what quarter sections, pieces or tracts of the land and ditch was located upon. Part of it was built first and surveyed afterwards. All of these surveys were made at different times prior to 1904. I made no survey in 1904 for the purpose of determining the areas that were under irrigation at that time. These surveys were made at different times for the purpose of determining where the government lines or company lines were. Where the new land was that was placed under irrigation, or what forty-acre pieces the ditches covered. These surveys were made in the same way I have previously described as having been made for Defendant's Exhibit No. 5. I had a transit when I made them. I stepped off the distances connecting with section or quarter-section corners as I went along, the same as I did for Defendant's Exhibit No. 5. That portion of this map that is added to Defendant's Exhibit No. 5, and the location of the ditch as I platted it on this map is also from calculations based on a correct survey. Such calculation is based first on the assumption that the shaded portion is correctly placed on the map and that the ditch has been correctly platted. I then calculated the area

between those ditches, last evening. The large area colored red on this map is in sections 14 and 11, 46 north, 64 east. It is under the upper Warm Springs ditch, the middle San Jacinto ditch and the lower Warm Springs ditch. These ditches are not shown on this map, except part of the upper Warm Springs ditch. The ditches were not there in 1889 but were there in 1904. The ditches are not shown on any other maps that I have produced. I got the data from later surveys that I made. I think that particular tract of land was surveyed by me in 1904. In surveying the land to find out where the ditch lay, I located simply the upper ditch, that being the outside of the upper boundaries of the irrigated land. I did not mean to say I run lines around that tract for the purpose of determining the area. I started in at the corner of sections 14, 15, 22 and 23, of 46 north, 64 east, and ran along the line between sections 14 and 15, until I got to a point on the line of the fence that is extended, starting a little bit east of that point and running in a southeasterly direction I took the bearing of that fence and measured the distance from the section line to that point, and then I followed along the fence line from that point on out, and noted the place where the irrigated lands left the fence line to the right, and stepped off the distances and platted it on my book. I located the ditch by simply noting the distance from the section line to the ditch at this point where it entered the field, at the southwest corner. To locate that point I stepped off along the section line until I got on a line with

the fence and then stepped from there to the fence, to the southwest corner of the field. I forget whether the ditch was there or not; I think the ditch was above the fence. I was merely locating partly the ditch and partly the field. It was really to locate the field and not the ditch, but it happened at one point the ditch was inside the field and so in locating the irrigated land I actually located the ditch. My notes do not show the places where the ditch crosses the section line. Whenever I was within a quarter of a mile of a government corner, or had an idea that my stepping might be a little bit out, I would then run over to the government corner, even if it was more than a quarter of a mile, and find out where I was. I did not run the side of the field in section 14, which is irregular, by courses and distances. I was alone when I stepped it and was carrying a transit to get the bearing.

RE-DIRECT EXAMINATION:

I took the course of the fence line on the tract about which I have been asked. The courses were taken by instrument and the distances by stepping. The fact is I took the course of the fence and then when I left the north side of section 14 I stepped back to the section corner between sections 10, 11, 14 and 15, and if there was any error I corrected it there. The fence being on a straight line, it was bound to check up. I testified that I observed the mode of irrigation and actual application of water upon the land after the ditch construction between 1889 and 1904, and there was land lying unirrigated under the Har-

rell ditch and north of the San Jacinto lane that would have been covered by that ditch or by a lateral from it. The Harrell ditch is the one referred to as the High Line ditch. If water had been carried through the Harrell ditch and turned out at the end north of the San Jacinto lane, it would have spread over a quite a tract of land in section 13, 44 north, 64 east, both on the bottom and on the bench land to the east of the bottom. I never saw any irrigation done from that ditch north of the lane. There is no other instance where ditches have been constructed running somewhat parallel with the river for irrigating the lands between the ditch and the river.

RE-CROSS EXAMINATION:

The little red strip in the west part of section 11, opposite what is marked Gray's dam, was located in the same way as the fields colored red in sections 14 and 11. My recollection is that in locating that I run directly north from the quarter-section corner on the south boundary of 11 to a quarter-section corner on the north boundary of 11, and on through section 2, and from that point as a basis I went off at right angles to the west and located the land. I went over in between the south end and the north end two or three times. I didn't run a line around the tracts; I stepped them off in different places and sketched in. I always do that in irrigation tracts.

Said map was thereupon offered in evidence as Plaintiffs' Exhibit No. 32.

MR. McCLELLAN: May I be allowed to explain a little of the other markings on that map?

MR. HAGA: I don't know as there is anything on the map that requires explanation so far as we are concerned, your Honor.

THE COURT: No, not unless counsel desires it, Mr. McClellan.

L. W. BEASON, being re-called, testified as follows:

DIRECT EXAMINATION:

I am somewhat familiar with the report that has been referred to as the Herrington report. It contains measurements on the flow of water of some of the ditches I testified about yesterday. Not all of the ditches were running their full capacity at the time those measurements were made. Mr. Herrington measured the flow in what I called the Harrell ditch on the San Jacinto ranch in July. It was 20 second feet. I calculated the capacity of that ditch to be $19\frac{1}{2}$ second feet; on what is labelled on the map as the High Line canal the maximum flow given in the report is 84 second feet. That measurement was made during the month of June. I estimated it at 90 second feet. The maximum flow of the San Jacinto ditch, or what is sometimes called the Middle ditch, as reported by Mr. Herrington, was 20 second feet. The measurements were made May 18, 19, 20, 21 and 22. I calculated the capacity of that ditch to be 24 second feet. The maximum flow in this report of the Fisher ditch is 26 second feet on June 28, 29, 30 and 31st, of the year 1914. I calculated the capacity as 21.3 second feet, as I gave it yesterday. In the East Bore's Nest ditch the maximum flow recorded

in the report is 11 second feet, and I calculated the capacity of that ditch to be 10.8 second feet. There are no other ditches where Mr. Herrington's report compares with my calculated capacity. I made the measurements in November and December, 1914.

CROSS EXAMINATION:

Mr. Herrington's measurements in all cases I think were made right near the point of diversion. There were dams put in the ditches below to throw the water out in the sloughs below the point of diversion.

THE COURT:

Q. I don't understand that. Did you see him make this measurement?

A. Mr. Herrington?

Q. Yes.

A. No, sir.

Q. Well, how do you know how he measured it, or when or where?

A. I am just reading from this report.

CROSS EXAMINATION (continuing):

I have examined the report, but I don't remember the particular point as to where he got the measurements.

The tunnel ditch broke last year, but I don't think it was because the capacity of the ditch was crowded. Some dirt on the upper bank fell into the ditch and caused it to overflow.

JOSEPH JENSON, being recalled, testified as follows:

DIRECT EXAMINATION:

I have examined the Herrington report. The point where the measurements of the ditches were made is shown by a map included in the report. It is a small scale map covering the entire distance of the Salmon River up from the Vineyard ranch to the Bore's Nest. I have examined that part of the report in which Mr. Herrington gives the total run-off of the streams in 1914, as well as the diversions from the streams for use on the defendant's lands. I have computed what he called the net loss between those two amounts. On the table following page 16 of the report, called Table 4, a summary of results is given showing unmeasured inflow and net losses on Utah Construction Company lands. The total of the last column, which is entitled "Net Losses on Lands of Utah Construction Company, Including All Ranches," the figure given is 9,580 second feet. The investigation extended from May 16th, apparently, to the end of September, 1914. I don't think that measurements extending only over that period of time would include all of the return water used for irrigation, because the return water, the seepage water, would continue to run a considerable time after the conclusion of this investigation. There is a column in the same table entitled "Unmeasured Inflow On the Lands of the Utah Construction Company, which is obtained by subtraction. The return water that was measured was the surface water.

Q. Mr. Jenson, you spoke while you were on the stand before about these lands, pasture land, at the San Jacinto ranch, being somewhat influenced by

alkali, affected by alkali, and that it would require flooding to take care of that, to eliminate it sufficiently for the tolerance of plant life. Can you say from what you saw there and from the irrigation that you saw take place, by which the lands were flooded, as to what the quantity of water would be for such irrigation there as you say would take place, as compared with what it would be on upland pastures?

MR. HAGA: If the Court please, I object to that. I don't think the witness has qualified from anything stated heretofore to express an opinion on that. In the first place, the examination he made was made late in the year. It wasn't made at the time the irrigation was going on.

MR. NEBEKER: I thought he testified that he saw the irrigation this year; that is my recollection, that he went over there and saw the method of applying the water to the land.

MR. HAGA: I have no such recollection.

MR. NEBEKER: This year, a few days ago; I am quite sure.

THE COURT:

Q. Is that the case, Mr. Jensen?

A. Yes, sir; I was on the lands last week.

MR. HAGA: I would like to have the question read then, in order that I may know just what is called for.

(Last question read.)

MR. HAGA: I still insist on the objection, your Honor. The record so far does not show that the witness can express an opinion on the question.

THE COURT: Sustained.

CROSS EXAMINATION:

I did not say that the Herrington report showed that the return flow was only from surface water. The measured portion of the return flow was only surface water. He gives the column of unmeasured inflow. There are two columns of return flow; one the measured return flow and the other the unmeasured return flow, and he explains how he obtained that unmeasured return flow. I intend to be understood as stating that the unmeasured return flow does not include the surface water. It includes water that he got by subtracting the water that appeared at the lower station, which were not accounted for by diversions after allowing for the surface return flow. It would include the percolating water. Mr. Herrington's measurements of the Salmon River were made at a point above any diversions by the defendant and then at a point shortly below the last diversion. The difference between those two is 9,580 acre feet, which, Mr. Herrington says, is the net loss. To get at the return flow he measured the surface flow or estimates it where he can't measure it. He gives the percolating inflow and the surface inflow separately. He says he attempted to measure it but doesn't claim a very high degree of accuracy for it; he did the best he could under the circumstances. I know that the water would be flooding over the banks from the meadows into the river at a number of places. The 9,580 acre feet of water that is unaccounted for could be accounted for by evaporation; possibly some by deep percolation; possibly some remained in the soil itself.

The total acreage of irrigation in 1914, according to the report, consumed in one form or another, and lost by evaporation and percolation, a total of 9,580 acre feet. I understand that some of this water was put on the bench lands cultivated grain crops last year. All of the return flow from that might not appear within the date of this report. The month of September is included in the report. The irrigation of the grain land would be discontinued possibly six weeks before that time.

According to my calculations the movement of underground water in that soil would be at the rate of 145 feet a day. The investigations in that report commenced with the 16th day of May, 1914. There would be included the return flow from the water that was placed on the land before May 16. That would tend to offset a little the return flow that had not returned by the time he closed his investigations. Table No. 3 shows the total amount diverted in acre feet from the time the investigation was commenced to the end of September. It shows a total diversion of 7,034 acre feet from the High Line canal. The return flow is 500 acre feet, showing a net loss from that ditch, that diversion, of 6,534 acre feet.

RE-DIRECT EXAMINATION:

That would not include any of the water placed on the land through the High Line ditch that returned to the channel after the date of the last measurement given by Mr. Herrington. In ascertaining the amount of net loss the measurements were made at the head of the canyon below the mouth of Shoshone Creek,

and it is from those measurements that the result giving the total amount of net loss are obtained. At the place where those measurements were made there was a gravelly formation; the stream runs right close to the ledge on the east side of the canyon; then there is approximately 150 feet of ground between that and the west edge of the canyon, that consists of gravel and sand to a depth of at least six feet. The measurements at that point included none of the sub-flow of the stream. I understand from his report that a good deal of the visible return water was not measured. It was water that was running over in a thin sheet and he estimated it. He arrived at the quantity of seepage water simply by taking the total amount of water above the point of diversion and subtracting from that the total amount of water below all points of diversions. This is the way he arrives at what he calls the unmeasured return. I would say that that would not necessarily include all seepage and percolating water, because if we take into account the seepage water in the canyon below and add that to the discharge of the river at that point, there would be more water appearing than his record shows.

RE-CROSS EXAMINATION:

The main gauging station above these ranches is in a hard formation, and the unmeasured flow would be insignificant. The lower gauging station is probably four or five miles below the last diversion. It is probably eight miles below the head of the High Line ditch. I haven't measured it; I can look it up on the map.

EXAMINATION BY THE COURT:

I examined the formation but did not dig any test pits near the upper gauging station; just examined the formation of the canal running alongside of it. The river runs through a lava ash formation, cemented lava ash. I don't know what is below that.

It was thereupon stipulated that the Herrington report would be left with the records for the Court's use.

The following stipulation was thereupon made by and between counsel for the respective parties:

It is stipulated and agreed that on the 18th of July, 1891, John Sparks and Jasper Harrell conveyed to the Sparks-Harrell Company, a corporation of California, all the lands owned by them along and on the Salmon River and its tributaries and elsewhere in Elko County, Nevada, together with any and all water rights owned by them and used therewith, and that thereafter, by deed of date of October 31, 1908, said Company duly conveyed to the Vineyard Land & Stock Company, a corporation of Utah, all of said lands and all other lands in said County and State owned by such grantor at the time of such conveyance, and as shown in red on Exhibit 1 herein, and according to the abstracts thereof herewith tendered to the plaintiff and to the Court for use at any time, and together with any water rights owned by said grantor and used therewith.

Then as to the Idaho lands it is stipulated and agreed that the Vineyard Land & Stock Com-

pany, a corporation of Utah, by mesne conveyances from original owners, is the owner of all the lands on Shoshone Creek and its tributaries, in Twin Falls County, Idaho, as shown by Exhibit 10 herein, and the abstracts thereof, herewith tendered to the plaintiff and the Court for use herein, and as shown by deeds thereto from the Sparks-Harrell Company, of dates October 31, 1908, December 29, 1909, and July 27, 1910, as recorded in the office of the County Recorder of Twin Falls County, Idaho.

It is further stipulated that the original conveyances from Sparks and Harrell to the Sparks-Harrell Company are included within the lands later conveyed by the Sparks-Harrell Company to the Vineyard Land & Stock Company, that is, they are a part of the larger amount later conveyed to the Vineyard Company.

J. H. PATTON, duly called and sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I am engaged in engineering and surveying, and reside at Salt Lake City. I had about two years of college training in the University of Wisconsin, but didn't graduate. I have been engaged in railroad location, construction, irrigation work of different kinds, some hydro-electric work, power plant construction and pipe-lines. I gathered the data myself for Defendant's Exhibits 7, 11, 12, 13, 14 and 15, under Mr. Beason's direction. I did the field work.

Most of the time I had four men assisting me; there was one or two times when I only had about two men. I was engaged in obtaining that data for about eight months. I checked the notes and other data of those measurements with the maps as they were being prepared. The colored areas shown in dark green, light green, yellow and gray upon those maps correctly represent the areas of irrigated lands according to my measurements. I am not able to testify as to the amount of irrigated lands under each of the ditches shown on those exhibits. The waters of different ditches overlap and intermingle with each other in such a way that you can't draw any conclusions as to the bounds or limits that the waters of any one ditch may cover. Certain of the areas are covered by more than one ditch. I am able to state from my own knowledge and observation that all the colored areas shown on those maps, purporting to show irrigated areas, are in fact areas that have been irrigated. I had something to do with taking the cross-sections of the various ditches. They were generally taken a short way from the point of diversion and in all cases above points where water had been turned out of the ditches. They were taken at points where the ditches were the smallest. After a ditch has had water taken out of it for some distance it is customary to make the ditch a little smaller. They are smaller at the lower end than they are at the point of diversion. I was with Mr. Beason when he made the measurements upon which his computations were based.

CROSS EXAMINATION:

I have been connected with the defendant company a little over a year. I went onto the Salmon River ranches about the 2nd of April of last year. I did not know anything of the conditions of the ditches on these lands before that time. I commenced to survey about the 10th of April, 1914, on the San Jacinto ranch. I first surveyed those on the north end of the ranch at the Bore's Nest and San Jacinto fields. From San Jacinto to Bore's Nest took about three weeks. I then started at San Jacinto and worked south to the Bird's Nest. It was about the 9th of July when we finished at the Bird's Nest. We then went on up the Salmon River to the Vineyard, through the canyon. I couldn't say how long it took us on the Vineyard ranch. We worked on the Vineyard and Hubbard ranches and were in that vicinity on the two ranches a month or more. I have never had any great deal of experience in the measuring of water before 1914. The measurements made occasionally by me, or in which I assisted prior to that time, were sometimes made with a current meter and sometimes with a weir. Prior to 1914 I had had about the same experience in measuring ditches as in measuring water. In measuring the ditches I don't recollect what formula we used. There are several formulas that are considered very good. Cotter's formula is considered by most engineers as being fairly accurate for most water measurements. I couldn't say whether we used that one or not. I was engaged in locating the boundaries of the meadows, locating the streams, section corners and any top-

ography that might be on the ground. Mr. Beason was with me occasionally in the field. I was instrument man. Mr. Beason was chief of the party. Most of the times when he was with me he would sometimes take a chain and sometimes a rod, or whatever there was to be worked with, depending a little bit on what we were doing. A great many times he would come out and give me my instructions and then leave. The rod man selected the location of the lines that were to be run, or the boundaries of the plat that was to be made. I was behind and had the instrument. I don't know whether the upper ditches are so much larger than is necessary to irrigate the lands between them and the next ditch below, but from any ditch the water will run beyond the point where it is actually necessary to use it. The water doesn't always go on the ground; some of it runs over and the consequence is that it intermingles with the waters of the other ditches. I saw evidences of that in a good many cases. After you get beyond a certain point I could not tell what land was watered by one ditch and what was watered by another. It isn't exactly my idea of it, but it is true in one sense at that, that there was so much water flowing over and onto the land that lays between the two ditches that it could be used again on the land below and formed a substantial amount of water that was used below.

RE-DIRECT EXAMINATION:

I saw all of the areas that the rod man picked out. I gave instructions to the rod man in Mr. Beason's

absence, as to the details of the selections and the areas were selected by the rod man under my supervision. At the time I made that survey there was water on most of the lands. As to the part upon which water was not actually on, the ground was generally moist, and if it wasn't moist there was a certain amount of silt and dirt, et cetera, that the water had left on the grass, probably two or three inches high. It showed there had been water there.

RE-CROSS EXAMINATION:

There was water running over the land when the survey was made; occasionally we were working in water. We were working in water most of the time on the lower end of the San Jacinto ranch.

The ditches were measured in November, 1914; I think it was after the water was turned out of most of them. The Warm Springs ditch had water in it. The measurements were made as explained by Mr. Beason.

DEFENDANT RESTS.

E. B. DARLINGTON, heretofore sworn as a witness on behalf of plaintiffs, being called in rebuttal, testified as follows:

DIRECT EXAMINATION:

I have examined Defendant's Exhibit No. 5 and other exhibits of the same character, purporting to show the lands that were irrigated on the Salmon River, in a general way. I have compared them with the map which was introduced on behalf of plaintiffs purporting to show the land under irrigation. I have made a map showing the irrigated lands shown upon

defendant's exhibits that are not included in the irrigable area on plaintiffs' maps. The map to which I refer is marked Plaintiffs' Exhibit No. 33. On this exhibit the land that is irrigated according to our observations is painted in red. The land not so irrigated is painted in green. The land painted in green on this map represents the land that is claimed by defendant to be irrigated and not admitted by us to be irrigated. On that part of Plaintiffs' Exhibit 33 showing the Vineyard ranch, colored in green, the land was very largely in sagebrush, rye grass and partly encrusted with alkali. We could find no evidences of irrigation. We searched for it. A strip on the east side of Jake's Creek and running down the west boundary of the tract was covered with sagebrush. It is the tract lying between the field colored red and the Tunnel ditch. It is the land shown on Defendant's Exhibit No. 4 as being irrigated. Plaintiffs' Exhibit No. 13 is a photograph that shows the sagebrush land on the west side of Jake's Creek. That would be the part to the south and west. Where it is patched in red has since been cleared. Relative to the figures I have just placed on the map, where I have drawn an arrow, the picture was taken looking northeasterly. It is point 25 on the Tunnel ditch. It shows the condition as it was in October, 1911. Plaintiffs' Exhibit No. 12 was taken at a point north of the ditch referred to in this case as the old Harrell ditch. The picture was taken at point 33, as marked on Plaintiffs' Exhibit 33, and was looking in a northeasterly direction.

That shows the fields that have been marked on this map. It does not show what is excluded, except in the far distance. It is land that we included in our irrigable area. If it was as good as that we classed it as irrigated lands. The foreground on Plaintiffs' Exhibit No. 27 was excluded from the irrigated land. That picture was taken near the crossing of the Tunnel ditch and Jake's Creek, looking northerly, at the point on Plaintiffs' Exhibit 33 near station 35. The camera was pointed approximately the direction of the arrow I have just placed on Plaintiffs' Exhibit 33. My recollection is that the photograph was taken in October, 1911. The sagebrush land in the foreground of this picture shows the land that was excluded. That land didn't bear any evidences of having been irrigated. I didn't find any ditches on it. I walked over it, just observing general conditions. I didn't make any special search for ditches at that time. I made observations with the view of finding any sources of irrigation and the land that was being irrigated. The land at the north and east of the field in red on Plaintiffs' Exhibit 33 down the river and which is colored in green on that exhibit, was grown up to willows and is not irrigated so far as I could find. There are no evidences of any irrigation or ditch lines. The land from the northerly limit of what is colored green on Plaintiffs' Exhibit 33, as part of the Vineyard ranch, and the little strip of green which appears at the southern line of section 20, 45 north, is a narrow canyon overgrown with willows in the bottom. There are no ditches along

there. The land in sections 20 and 21, 45 north, and 17 and 16, 46 north, colored in green on Plaintiffs' Exhibit 33, is overgrown with willows and cut up with sloughs. There was no evidence of artificial irrigation. There is evidence of overflow by the river during high water season. The land in township 45 north, at the east of the strip colored red on Plaintiffs' Exhibit 33, and colored green on that exhibit, claimed by the defendant to be irrigated, is overgrown with willows and cut up with sloughs. I could discover no evidences of any ditches there. A large part of it would overflow during high water of the river. There are sloughs through it, which in 1911 were overgrown with willows and sagebrush. I could see no signs of any systematic use of them for irrigation. By systematic I mean artificial use, where water had been directed and controlled. I think those lands have not been cut over; they are covered with sagebrush and willows. The land in section 34, between the two fields colored red on Plaintiffs' Exhibit 33, colored in green on that exhibit, is overgrown with willows and other brush and cut up by sloughs. The land in sections 22, 23 and 14, township 46 north, colored in green on Plaintiffs' Exhibit 33, is very largely in willows, rabbit brush and some sagebrush. I couldn't find any that had been irrigated. The island south of the lane is largely sand-bars and gravel-bars. The lane is represented by the white strip not colored, extending through section 14. South of that was sand and gravel-bars and sagebrush. The island north of the lane, colored

in red, is cut up by sloughs and willows; not so much sagebrush north of the lane. On the entire ranch from Bird's Nest to Bore's Nest, I would say there are between 500 and 1,000 acres covered with willows. In some places they widen out into wide strips and in other places there is just a fringe along the bank. The river bank throughout this entire ranch from Bird's Nest to Bore's Nest is low relative to the surrounding country. The river overflows and floods a large part of it at certain times of the year. It would overflow a considerable part of it without dams in the river. The land I have colored green and hatched in red represents land that has not been either cleared or in cultivation since the extension of the High Line ditch beyond the lane. The explanation I have made as to the condition of the land that is colored green and not included as irrigable land, extends to other parts of the map and to which my attention has not been particularly called.

The gauge below the mouth of Shoshone Creek is in section 33, 47 north, 54 east, on Plaintiffs' Exhibit 33. It is in section 23. The river at that point is narrow in cross section. The bed is gravelly. The river at that point is I suppose 150 feet wide, or 200 feet perhaps. The Twin Falls Salmon River Land & Water Company, in co-operation with the Geological Survey, maintains that station. It has been so maintained for four years that I know of. It is in a very good situation to give accurate results, I think. The canyon commences about 300 feet about the gauge. The annual run-offs which have been heretofore testified to, do not include the diversions made above.

The banks of the river covered by the water in the Plaintiffs' reservoir are quite similar to the banks of Rock Creek and Snake River canyon in the Twin Falls country. It is the same lava formation.

Q. What do you know about the walls of Rock Creek and of Snake River, in those canyons, permitting of seepage or water passing through them?

MR. NEBEKER: That is objected to as immaterial, irrelevant and improper rebuttal.

THE COURT: I doubt whether it is very material, but it seems to be rebuttal. I haven't been able to appreciate the importance of the testimony upon this general subject, but you went into it with Mr. Jensen. You undertook to show that there would be seepage or drainage through the adjacent walls of the canyon and dam. I suppose this testimony is for the purpose of rebutting that general conclusion.

MR. NEBEKER: They went into it, if your Honor will remember, in their case in chief.

THE COURT: I think that was brought out on your examination. You asked as to the wastage of water from the dam, your idea being, as I remember it, that that would be charged against them that they would be charged with the loss at the dam. I suggested that if the dam was unreasonably constructed, that is, if it was wastefully constructed, that they might be chargeable with unnecessary waste. I don't think they went into that, did they?

MR. NEBEKER: Your Honor made that suggestion, and of course I followed the suggestion and desisted from further catechization upon that sub-

ject. They went into it fully with this witness and Mr. Robinson.

THE COURT: Haven't you gone into the matter of showing how much water there was before the dam—

MR. NEBEKER: By cross-examination.

THE COURT: Before they went into it?

MR. NEBEKER: With their witness. There was some testimony upon which it was cross-examination, but it was while I was cross-examining that your Honor made the suggestion, and then they went into it at large.

THE COURT: That isn't my recollection. I think I shall let him answer.

Mr. Darlington (continuing): The walls of Rock Creek and Snake River in those canyons seem to be almost sealed against percolation. The evidence of that is that the lands in the Twin Falls neighborhood are water-logging, due largely to the fact that there is no drainage of the water through the canyon walls into Rock Creek and Snake River. A great many wells have been sunk to develop an artesian flow and this flow is then carried in surface ditches over the brink of the canyon. This is very largely due to the fact that water don't seep through the walls of the canyons.

CROSS EXAMINATION:

I didn't say that it was my understanding that lava rock was impervious to the flow of water. I would not say that the formation at the ends and near the dam would be impervious to water. I said the walls of Rock Creek and Snake River are practi-

cally impervious. I don't say that the walls of the canyon immediately above the plaintiffs' reservoir are impervious to water. I know that a great quantity of water has escaped by seepage from that reservoir somewhere. I can't tell what the loss by seepage is. There is a much larger loss than is accounted for by evaporation. In my opinion the loss to be accounted for by evaporation is only a small portion of the total loss.

I suppose I visited the San Jacinto ranch and the Vineyard ranch six or eight times. Altogether I should say I have spent about six or eight days there. I did not make any of the surveys myself. I did not prepare Plaintiffs' Exhibit 33 from any surveys that I made. I took the photographs I have mentioned this afternoon in October. There was some stock in the fields then, but not very many. I don't say that no grass was grown upon the land shown by those photographs identified by me this afternoon. I don't say either that no grass was grown as a result of irrigation, but it is just a question of what is to be considered irrigation. Turning the water out of a ditch and letting it overflow through sagebrush to soak up the land, would not in my opinion be irrigation. Have never considered sagebrush land as being irrigated. I would say water was being wasted on it and not used on it. If I saw that it was clearly the intention to turn the water out from the ditches on this sagebrush land, merely for the growth of grass along in the brush, I would probably classify it as irrigated land; it would have to be apparent to me that that was the intention before I would classify it as irri-

gated land. I think a very large part of that country is pasturage. On Plaintiffs' Exhibit 33 I have excluded from the irrigated lands almost the entire river bottom about the San Jacinto ranch. I know that there have been dams put in the natural channel at intervals, and also in the sloughs that lead out from the natural channel. There were a few places where the ends of dams still remained. The dams had been washed out. I don't know how many temporary dams had been put in the natural channel in that section colored green on Plaintiffs' Exhibit 33, or in the sloughs running through that section and which had either been removed artificially or by the natural action of the water.

RE-DIRECT EXAMINATION:

I can only say that there was some grass scattered around through the sagebrush, but not in any great quantities at all in the sagebrush lands that I excluded as not having been irrigated. I don't think it was materially different from what I find in sagebrush that has not been irrigated. The photographs cover in most cases fields that I included as irrigated land, as well as land that was excluded. You find a white incrustation of alkali and salts at the Vineyard, along by the Bird's Nest and San Jacinto, some at the Bridge ranch and some on the Island.

RE-CROSS EXAMINATION: It is mostly the white alkali.

C. B. STOCKING, heretofore sworn as a witness on behalf of plaintiffs, called in rebuttal, testified as follows:

DIRECT EXAMINATION:

I testified that I made the surveys shown on Plaintiffs' Exhibit 33. I was in charge of the party that made the surveys. I spent about five weeks in the work. I had two assistants besides the driver, who helped occasionally. On Plaintiffs' Exhibit 33 the land colored in red is land that was under the ditches. Taking the land north of the lane between the border of the red line and the east line of the river, there is a strip of land north of the lane and partly south of the lane, of 1,117.4 acres; it extends north about a mile. I have included that as pasturage not irrigated. It evidently is inundated in high water, but the main part of it is covered with sagebrush and willows. The willows are very thick in places and very wide in places; at the upper end they cover practically the entire strip from the east channel of the river over to the boundary of the irrigated land. North of that I have an area of 414 acres, classified as hay, not irrigated, on the island. There were willows lining the banks of the stream and scattering willows across the island. There were no ditches at that time. I looked the island over quite carefully and found no indications that there had been any ditches. The river in high water evidently overflowed. The land that is east of the east fork of the river, which would now lie under the Big Ditch as constructed, was at that time entirely covered with sagebrush. It was not under any ditch that was then carrying water, and the acreage was computed as lands that could be brought under the ditch. Going

south of the San Jacinto lane, up as far as Middle Stacks, is an area which was included in this 1117.4 acres as pasturage not irrigated. The land that is south of the San Jacinto lane included between the branches of the river is land that is covered with sagebrush, gravel bars and willows. Over towards the west fork of the river there are large gravel bars and in sections down in the bottom the sagebrush is very thick, making walking difficult. On the land south of the lane and east of the west branch of the river, marked or corrugated on Plaintiffs' Exhibit 33, is sagebrush and rabbit brush. There was no grass that I could find in the sagebrush, with the exception of right along the river bank. There was a strip probably 300 feet wide of rye grass that was quite tall in places; it grew in bunches. From the looks of it it had not been cut that year, because it interfered with the sights of our transits. Between the Upper Middle Stack and what is known as the Big Ditch, I have marked a strip designated as brush, containing 57 acres. I could find nothing in it but brush; no grass whatever; practically bare. In the strip that is green going from the Lower Middle Stack to the Upper Middle Stack, and the strip in green composed of the river and willows, I could see nothing that had been irrigated; nothing but brush, no rye grass to speak of. That is the condition all the way up through the Upper Middle Stack. I traversed the west side of the river, and the southern part is included in pasture designated as being irrigated, but which is more than fifty per cent. covered with

sagebrush. It is very rough and some rye grass grows down towards the river banks. On the east side of the river there was nothing that I could find but sagebrush, and no more grass than would ordinarily grow in the sagebrush. From the head of the Bird's Nest ditch, going over to the east branch of the river, there is a mass of willows that is almost impenetrable. We had to keep watch of the boys going through to see that they did not get lost. That is the condition to Contact and above. At the place marked green here the river is in a narrow rocky bottom, with willows on the bottom and I think a little grass between the clumps, such as you would ordinarily see down on the river bottom. At the upper end of the Vineyard ranch, going up towards the mouth of what we call the old Vineyard ditch, is a strip of green of 42.3 acres, marked as pasture not irrigated. That lies down below the bluffs right next to the river and is fringed with willow clumps scattered through it, used as pasture, and in my judgment would be overflowed when the river got to a little lower than its highest mark. There are no ditches there. The section lying north of the Vineyard and between the boundaries of the Tunnel ditch, was grown up to sagebrush and rye grass. On the east side of this border of grass is sagebrush and rabbit brush and rye grass scattered through. From the appearance of it it had not been cut. It was in bunches and where you find bunches you will find rye grass up probably two or three feet high. The north end of the Vineyard is what is known as Starvation field.

There was no grass to be found. It was willows, sagebrush and bare ground. It is alkalied. Down below Starvation field, as far as it is colored, is simply willows. Sagebrush comes down to the willows. The willows bordered the river for a distance on each side, and there was no grass. A little below the Vineyard from Starvation field it enters into the canyon and is lined with thick willows on both sides of the river. It is sketched in from township plat. We didn't traverse this section here. The river is very winding and will practically double back on itself. It makes the willows very wide in places. The road follows the river quite closely; it hugs the cliffs. You can see the river from the road practically all the way.

I have heard the testimony as to ditches from Jake's Creek, but I failed to find those ditches. I was all over that strip of country through here, so that if there had been any ditches I would have found them. The surveys I made were such as are usually made by engineers. The distances were read by stadia and we used the transit for courses. Part of the distance was actually chained out and the rest was stadia work checked with chainings, to see that the instrument was not out of adjustment. I would call the survey correct.

CROSS EXAMINATION:

I commenced making the survey on the 18th of December, 1911, and finished just before the 1st of February, 1912. There was some stock in the Bore's Nest field and some on the Vineyard. I would not

say that the country had been depastured. I have had no experience in connection with the livestock ranches. I have done farming work, but no ranching, as it is termed here in this western country. I have been in the west about 10 or 11 years. I am acquainted with farming as carried on in the far east, and my work here has been engineering on railroad and irrigation projects. I am not used to the kind of irrigation that is conducted upon properties such as those of the defendant. That isn't the kind of irrigation that I call irrigation at all. The irrigation which is produced by putting dams in the natural channel of a stream and just flooding the water out over the land in the swales, and then picking it up and spreading it still more and covering up all the meadow land, I have never thought of as being irrigation. If the dams were put in and men stayed with the water and kept spreading that water around and putting it to a beneficial use, I would call it irrigation. I would call it irrigation if they put the dams in and spread the water out over grass land and distributed it fairly well over large areas and let it run there until the grass was matured; or if there was grass in the sagebrush outside of what would naturally grow, that was brought up by irrigation, and the water cared for instead of just turning it out and running it wild, I believe that would be irrigation.

RE-DIRECT EXAMINATION:

In making up the survey and the maps showing the irrigated area, and in determining what land had

been irrigated, I traversed all the ditches which were to be found and all the land that was under ditches, whether in sagebrush or in rye grass, and it was included as being irrigated. If there was any ditch from which water might be procured I would call it irrigated, and the same with respect to dams.

WILLIAM J. YOST, duly called and sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:

I live at Brown's bench, postoffice address Rogerson, Idaho. I went onto the lands of the Vineyard Land & Stock Company on the Salmon River in 1896. I worked for the Sparks-Harrell Company something like six or seven years. My headquarters during the first three years was at the Vineyard and Hubbard. After that I was irrigating on the Salmon River from Bird's Nest to the Bore's Nest; four or five years. I did not do all of the irrigating; I had one man most of the time; part of the time I did it alone. In the early part there were two of us in fixing up the dams; in the later part I might be alone and was a part of the time. From June until the 1st of July, only about a month, I was alone. The occasion for having a man with me in the spring was that we had to fix up the dams and heads of the ditches and so forth. We generally called it about 10 or 11 miles from the Bird's Nest to the Bore's Nest. We did whatever irrigation was done on both sides of the river between those points, or most of it. I did the mowing between the San Jacinto and Bore's Nest. Sometimes there were two or three machines doing the mowing. We

took something like 50 or maybe 55 days to cover the land. I don't know about the time that I was alone, or when there was two machines. I couldn't tell just the amount of days it would have taken one machine to cut over the lands that was cut for hay. I don't know that it would take quite a hundred, because I don't remember just what time there was two or three machines running. I don't believe a man could average over eight or ten acres a day with one machine. I don't believe that there is a great deal of difference in the area between the San Jacinto buildings to Bore's Nest, or in hay there, than above the San Jacinto buildings. I think the largest acreage cut over is above San Jacinto. I mean the Bird's Nest and Middle Stacks. The land we cut over was not taken in solid tracts. We just mowed the bottom lands, the best part of the hay. We didn't mow it all. The fields would be irregular.

CROSS EXAMINATION:

I irrigated on the Vineyard ranch in 1896 and '97. We tried to get the water on about the first of April. There was one ditch we called the Harrell ditch, that came from Salmon River. There was only one ditch on Jake's Creek which was on the east side. We irrigated the pasture lands in those days. There would be some little grease-wood, rabbit brush, rye grass and what other grasses might grow from irrigation. We had what we called the wild red-top that grows mixed with the rye grass quite a bit. I have irrigated the pasture lands and after irrigating them we had good feed for the cattle in the fall and winter. That

is why we irrigated the pasture land. I was told to irrigate a certain ranch and I irrigated all that I could. I irrigated all that I could at the Vineyard. I tried to run the water as far as I could. I spread the water over all the land I could at the Vineyard. I did it in a proper manner as far as my judgment goes. In irrigating we tried to keep the ditch full and have an outlet from the ditch and maybe furrows from the ditch sometimes to put it on the higher parts of the ground. We tried to turn the water out in a ditch and after it got on the ground see that it properly covered the ground. In addition to that I took a shovel and at times dug ditches here and there so as to convey the water onto the ground that it wouldn't otherwise reach. I usually used a shovel and had a team, and would go there and haul something, one thing or another, and put in there, or plow. I irrigated in 1898 on the Hubbard just the same as at the Vineyard. I irrigated everywhere I could get the water over. There was not very much sagebrush; there was some greasewood and rabbit brush in the pasture land that I irrigated. There were dams in Dry Creek above the Hubbard field and a ditch down through the field. I used that one spring and irrigated most of the pasture. Grass grew in that big field and it produced better grass on account of the irrigation. About four years after I left the Hubbard in 1898, I went to San Jacinto. While I was irrigating I always had a team and a saddle horse. I could use either one I preferred. At the San Jacinto proper I never irrigated. Each year I would

be irrigating something like three months, beginning with the first of April. I irrigated other lands besides the meadow land that was cut over in the fields between the Bore's Nest and the Bird's Nest; everything that I could get the water on, such as rye grass. There is always brush, more or less, and I irrigated all the land that I could for pasture. There was a quite a pasture, but I couldn't tell how much. By that irrigation I raised better crops of grass on the land. I did nothing else during those three months besides devote my time to the irrigation of those lands. I was going and coming constantly during the three months and was supposed to be over all of it. I was over all of it probably several times during the three months. I did my best to scatter the water and control it wherever it was necessary to make it cover the ground. I have heard of the place referred to in the testimony as the island. I built a rock dam there in 1903 or 1904 to get the water out. I irrigated all over the island. I used water from the Fisher ditch and put dams in the sloughs to turn the water over the land. The dams were made out of sod mostly, turf. The dams were put in to throw the water out on either side of the sloughs to cover the land. I would have to repair the dams each spring and maybe make some new ones. There was a quite a few dams.

RE-DIRECT EXAMINATION:

I had a camp at the Bore's Nest and one at the Middle Stacks; part of the time I was at one and part of the time at the other. The rock dam I spoke

of was at the head of the Matson or Harrell ditch and the Fisher ditch. The pasture or grass grows some little distance there above the ditches.

RE-CROSS EXAMINATION:

The pasture that grows above the ditches is due to sub-irrigation and after you get a few hundred feet or more away from the ditch there is no grass grows there. The ditching crew assisted me one spring in repairing the dams and ditches.

RE-DIRECT EXAMINATION:

The effect of overflows of the river during the periods of flood would in places probably raise some hay and pasture.

RE-CROSS EXAMINATION:

I don't think we had much overflow prior to 1904. In order to get the water out over the ground we had to use dams and ditches.

RE-DIRECT EXAMINATION:

The river does not always overflow. It might back in some sloughs to make feed, but not always to overflow on the meadow or anything like that. It didn't overflow all along the river.

D. C. WORKMAN, duly called and sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I reside at Churchill, Cassia County, Idaho. I worked for the Sparks-Harrell Company in the cow outfit beginning in 1899. I took charge of the San Jacinto ranch in September, 1910, and continued until January, 1912. I was looking over the ranch to

see that it was irrigated and to help irrigate it. I had charge of irrigation. In 1911 and for some years prior to that I seen no hay cut at the Bird's Nest. I was familiar with the ranch and noticed no hay being cut at the Bird's Nest from 1899 until 1912. I was on the river most every year during the summer time. Hay was cut at the Middle Stacks. The hay that was cut from the San Jacinto to the Bore's Nest was measured in 1911. I assisted in measuring it. My recollection is there was somewheres between four and five hundred tons. In that year hay was being cut on the San Jacinto ranch only at the Middle Stacks, San Jacinto and Bore's Nest. This number of tons of hay includes just from San Jacinto down to the Bore's Nest. My estimate would be that there was more hay cut there than at the Middle Stacks; not much more. There would be a little more than half I would say cut at the Middle Stacks than from San Jacinto to the Bore's Nest.

CROSS EXAMINATION:

I didn't take the measurements down. They were taken down by Alec Patterson. I didn't figure up the amount of hay; Patterson did. I seen the figures. The four or five hundred tons was just a guess of mine; to the best of my recollection it was somewheres in that neighborhood. Between 1899 and 1910 I was practically all over the range. I was riding from 1899 until 1903, on what is known as the Rock Creek side, in Idaho. We called it sixty or sixty-five miles from the San Jacinto ranch. I got over in around San Jacinto every summer gathering

cattle, and also went there for provisions. I was at the San Jacinto ranch at times during July and August between 1899 and 1903. I was also at the Middle Stacks in 1899 and went up the river past the Vineyard and Hubbard. In 1900 when I was over to the San Jacinto we were there for provisions and also to clean the cattle from the fields. That was in May. I was up as far the Bird's Nest in 1900. There was water out over the ground there at that time. That is where I saw no hay stacked the previous year. Water was being run on the meadow ground; it was being scattered out in places. I wouldn't dare estimate the meadow I saw water on in places. I saw water on the pasture. Some of the pasture had water scattered over it. I didn't go up to the Bird's Nest in 1901. When I had charge in 1911 I had the lower part of the Bird's Nest field irrigated. It was pasture land and meadow land too. In 1911 I had pasture lands put under irrigation in what was known as the island and Middle Stacks. There was pasture land all up and down the river. There was some at the Bird's Nest that year.

RE-DIRECT EXAMINATION:

From year to year while I knew the ranch the wild meadow was practically about the same. If anything a little less towards the last.

J. E. BOWER, duly called and sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:
DIRECT EXAMINATION:

I reside at Artesian, Cassia County, Idaho. I have known the Salmon River since 1873. When I first

saw it it was meadow land, grass land and willows, pretty much the same as it is now. I worked there until the fall of 1876 and have been through there off and on until 1903. I worked there as general manager of the outfit pretty nearly five years, until the winter of 1896. I hadn't been back there for eighteen years until last Sunday when I went up the valley and back again. There was no grain raised during my time on the Salmon River. The strip of meadow land along the river when I first saw it would vary in width. It wasn't all solid meadow. The points would run down in it with brush or grease-wood, but I should judge the whole valley for fourteen miles from Bird's Nest to the mouth of Bore's Nest would average in the neighborhood of half a mile wide. This would be in 1893, '94, '95 and '96. In 1873 the conditions were a good deal the same, only the grass land was probably widened out by irrigation afterwards. Jasper Harrell was the owner in 1873. He brought some cattle in there and wintered them in the valley. I think he had come in from California two years before that with a bunch of cattle. There were some beaver dams in the river. Quite a few opposite the Bird's Nest and some in the upper end of the Vineyard field at the mouth of the canyon. The dams caused the water to spread out. The Salmon River for a good many years naturally flooded out and covered a good deal of this meadow land from overflowing, especially if there was a big run-off in May and the fore part of June.

CROSS EXAMINATION:

To a certain extent there has been irrigation all over that valley since 1873.

A. E. ROBINSON, being recalled on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I was formerly State Engineer of the State of Idaho, and during that time proof of completion under permit No. 2659 was made, on March 29, 1912.

Table No. 4 in the Herrington Report, shows the diversions on the river. It is a summary of the results. It shows the net loss of 9,580 acre feet from May 16 to the end of September. It shows the unmeasured inflow on lands of the Utah Construction Company of 5797 acre feet. The figures given for the first month in that column marked minus 638 acre feet, represents a minus inflow, or, in other words, a loss. The unmeasured inflow as given in this table is the quantity of water which apparently returned to the stream. It is the excess of water at the Bore's Nest gauging station above what would be obtained by subtracting the diversions from the flow of the different streams above that point. It is water which has returned to the river not accounted for by the measurements above. A minus inflow then would be water which is absorbed by the land or by the river bottom that doesn't show up in the lower measuring stations. The totals at the close in the last two columns do not show the net loss due to the diversions of the defendant. The reason is that this table commences on May 16th, which is some considerable time

after irrigation commenced, so the quantity of net loss would be less than it actually was for the season; also the fact that during May there was a quantity of water absorbed by the land on the river bottom in reaching the water table of the valley, to the extent of 638 acre feet in May, which water was afterwards returned to the stream and credited as unmeasured inflow. In those measurements the defendant has not been charged with water diverted before May 16th. It has been credited with returns from that water up until September 31st. Some of the credits allowed the company for return water would result from water diverted before May 16th, and not charged up to the defendant; therefore, the net loss as shown in this table is less than it actually is during the season.

PLAINTIFFS REST.

Thereafter, on August 14th, 1915, and after the Court had filed its decision in writing, the defendant in open Court requested leave to introduce further evidence for the purpose of showing that the water that the Court intended to decree to defendant as a prior right could be most economically used upon the lands of the defendant under the High Line or Harrell Canal. The request was by the Court denied.

PLAINTIFFS' EXHIBITS.

Plaintiffs' Exhibit No. 1.

ARTICLES OF AGREEMENT

Between

James Rudolph Garfield, Secretary of the Interior,

for and on behalf of the United States of America,
and

Frank R. Gooding, Governor and President of the
State Board of Land Commissioners of Idaho, for and
on behalf of the State of Idaho.

These articles of agreement, made and entered into this 10th day of April, A. D. 1908, by and between James Rudolph Garfield, Secretary of the Interior, for and on behalf of the United States of America, party of the first part, and Frank R. Gooding, Governor and President of the State Board of Land Commissioners of Idaho, for and on behalf of the State of Idaho, party of the second part,

WITNESSETH, That in consideration of the stipulations and agreements hereinafter made, and of the fact that said State has, under the provisions of section 4 of the act of Congress approved August 18, 1894, of the act of Congress approved June 11, 1896, of the act of Congress approved March 3, 1901, through James Stephenson, Jun., its proper officer, thereunto duly authorized, presented its proper application for certain lands situated within said State and alleged to be desert in character, and particularly described as follows, to-wit:

List No. 14.

and has filed a map of said lands, and exhibited a plan showing the mode by which it is proposed that said lands shall be irrigated and reclaimed, and the source of the water to be used for that purpose, the said party of the first part contracts and agrees, and,

by and with the consent and approval of Theodore Roosevelt, President thereof, hereby binds the United States of America to donate, grant, and patent to said State, or to its assigns, free from cost for survey or price, any particular tract or tracts of said lands, whenever an ample supply of water is actually furnished in a substantial ditch or canal, or by artesian wells or reservoirs, to reclaim the same, in accordance with the provisions of said acts of Congress, and with the regulations issued thereunder, and with the terms of this contract, at any time within ten years from the date of the approval of the said map of the lands.

It is further understood that said State shall not lease any of said lands or use or dispose of the same in any way whatever, except to secure their reclamation, cultivation, and settlement; and that in selling and disposing of them for that purpose the said State may sell or dispose of not more than 160 acres to any one person, and then only to bona fide settlers who are citizens of the United States, or who have declared their intention to become such citizens; and it is distinctly understood and fully agreed that all persons acquiring title to said lands from said State prior to the issuance of patent, as hereinafter mentioned, will take the same subject to all the requirements of said acts of Congress and to the terms of this contract, and shall show full compliance therewith before they shall have any claim against the United States for a patent to said lands.

It is further understood and agreed that said State

shall have full power, right and authority to enact such laws, and from time to time make and enter such contracts and agreements, and to create and assume such obligations in relation to and concerning said lands as may be necessary to induce and cause such irrigation and reclamation thereof as is required by this contract and the said acts of Congress; but no such law, contract, or obligation shall in any way bind or obligate the United States to do or perform any act not clearly directed and set forth in this contract and said acts of Congress, and then only after the requirements of said acts, and this contract have been fully complied with.

Neither the approval of said application, map, and plan, nor the segregation of said land by the Secretary of the Interior, nor anything in this contract, or in the said acts of Congress, shall be so construed as to give said State any interest whatever in any lands upon which, at the date of filing of the map and plan hereinbefore referred to, there may be an actual settlement by a bona fide settler, qualified under the public land laws to acquire title thereto.

It is further understood and agreed that as soon as an ample supply of water is actually furnished in a substantial ditch or canal, or by artesian wells or reservoirs, to reclaim a particular tract or tracts of said lands, the said State, or its assigns, may make proof thereof under and according to such rules and regulations as may be prescribed therefor by the Secretary of the Interior, and as soon as such proof shall have been examined and found to be satisfac-

tory, patents shall issue to said State, or to its assigns, for the tracts included in said proof.

The said State shall, out of the money arising from its disposal of said lands, first reimburse itself for any and all costs and expenditures incurred by it in irrigating and reclaiming said lands, or in assisting its assigns in so doing, and any surplus then remaining after the payment of the cost of such reclamation shall be held as a trust fund to be applied to the reclamation of other desert lands within said State.

This contract is executed in duplicate, one copy of which shall be placed of record and remain on file with the Commissioner of the General Land Office, and the other shall be placed of record and remain on file with the proper officer of said State, and it shall be the duty of said State to cause a copy thereof, together with a copy of all rules and regulations issued thereunder or under said Acts of Congress, to be spread upon the deed records of each of the Counties in said State in which any of said lands shall be situated.

In testimony whereof, the said parties have hereunto set their hands, the day and year first herein written.

JAMES RUDOLPH GARFIELD,

(Seal)

Secretary of the Interior.

STATE OF IDAHO,

By F. R. Gooding, Governor and
Chairman of State Board of Land
Commissioners of the State of
Idaho.

APPROVAL.

To all to whom these presents shall come, Greeting:

Know ye that I, Theodore Roosevelt, President of the United States of America, do hereby approve and ratify the attached contract and agreement, made and entered into on the 10th day of April, 1908, by and between James Rudolph Garfield, Secretary of the Interior, for and on behalf of the United States, and F. W. Gooding, Governor, for and on behalf of the State of Idaho, under section 4 of the act of Congress approved August 18, 1894, the act approved June 11, 1896, and the act approved March 3, 1901.

THEODORE ROOSEVELT.

“F”—C. C. K.

GENERAL LAND OFFICE.

Railroad Grants and Right-of-way Division.

April 10, 1908.

It is hereby certified that this contract has been examined and compared with the duplicate, and found to be identical therewith; that the tracts therein described are duly indicated on the map filed with said contract, and are shown by the records of this office to be vacant and unappropriated.

It is further certified that the records of this office have been examined; the lands were not returned as mineral, are not in conflict with any mining claim, location, or entry, and are not within any withdrawn coal area.

CHARLES H. KERAN,

S. S. MARR,

Examiner.

Chief of Subdivision.

State of Idaho,
County of Ada,—ss.

I, N. Jenness, Register of the State Board of Land Commissioners of the State of Idaho, do hereby certify that the foregoing is a true and correct copy of Articles of Agreement between the State and the United States Government, except as to land descriptions covering Idaho Segregation List No. 14.

IN WITNESS WHEREOF, I have caused the seal of the State Board of Land Commissioners to be affixed this 19th day of April, 1915.

N. JENNESS,
Register.

(Seal)

PLAINTIFFS' EXHIBIT NO. 2.

(Plaintiffs' Exhibit No. 2 is the same as Plaintiffs' Exhibit "A" attached to the Bill of Complaint, and appears in the printed transcript of the Bill of Complaint.)

PLAINTIFFS' EXHIBIT NO. 3.

No. 3493.

APPLICATION FOR PERMIT

To Appropriate the Public Waters of the State of
Idaho.

1. Name of Applicant: John E. Hayes.

Post Office address: P. O. Twin Falls.

County, Twin Falls.

II. The financial resources of the applicant are:

(a) Cash on hand, \$5000.00—Sale of Treasury Stock and Bonds.

2. The quantity of water claimed is 1500 cubic feet per second.
3. Source of water supply, Salmon River: All flood, storm and unappropriated waters of said stream and its numerous branches to be stored in reservoirs to be erected on said stream. County of Twin Falls.
4. Location of point of diversion: SE 4 Sec. 18, T. 14 S. R. 15 E. B. M. Being about 600 ft. NE of point where county road crosses said stream, pt. of diversion bears N. $9^{\circ} 00'$ W. 1840 ft. from cor. of Secs. 17, 18, 19 and 20, T. 14 S. R. 15 E. B. M.
5. To be used for:
 - I. Irrigation and domestic use:
 - (a) Number of acres to be irrigated, 150,000 acres.
 - (b) In the following legal subdivisions: T. 11 S. R. 14 E.; Tps. 11, 12, 13 & 14 S. R. 15 E.; T. 12 S. R. 14 E.; Tps. 11, 12 & 13 S. R. 16 E.; Tps. 11 & 12 S. R. 17 E.; Tps. 11 & 12 S. R. 18 E. See list hereto appended.
6. Estimated cost of works, \$1,800,000.00.
7. Description of works for diversion:
 - I. Kinds of works: Loose *roce*, diversion dam and ditch.
 - II. Dimensions of works:
 - (a) Height of dam 110 feet, length of dam at top 190 feet, length of dam at bottom 110 feet, material used in construction, stone and earth.

- (b) Capacity of reservoir—See note.
 - (c) Size of headgate, width 24 feet, height 7 feet.
 - (d) Ditch (flume or pipe) width at bottom 60 feet, width at water line 88 feet, depth of water 7 feet. Average grade per mile is 1 foot. Length of ditch is 25.7 miles, and it crosses the following quarter sections: (*) (See list below) to . . . which is the point of intended use.
8. Time required for the completion of the construction of such work is 5 years.
 9. Time required for the complete application of the water to the proposed use is 4 additional years.

Remarks:

APPROVAL OF STATE ENGINEER.

The number of this permit is 2659.

Date of first receipt of application, 9:00 a. m. December 29, 1906.

Returned to applicant for correction January 28, 1907.

Corrected application received March 28, 1907.

Recorded in Book 8, page 2659. Approved March 30, 1907.

This is to certify that I have examined the within application for a permit to appropriate the public waters of the State of Idaho and hereby grant the same, subject to the following limitations and conditions:

Good and sufficient bond to be filed in the sum of \$3000.00 on or before May 29, 1907.

One-fifth of the works above specified to be completed on or before September 30, 1909.

The whole of said work to be completed on or before March 30, 1912.

The time for the proof of beneficial use of water appropriated in accordance herewith, to extend to March 30, 1916.

Witness my hand this 30th day of March, 1907.

JAS. STEPHENSON, JR.,
State Engineer.

Warranty deed, dated 26th day of January, 1912, from John E. Hayes and Anna E. Hayes, his wife, to Twin Falls Salmon River Land and Water Company, which conveys to said company "All that certain permit issued by the State of Idaho for the appropriation of 1500 cubic feet per second of the waters of Salmon River, Twin Falls County, State of Idaho, dated March 30, 1907, numbered 2659, and recorded in Book 8 at page 2659 of the Records of the State Engineer at his office in Boise, Idaho."

Certificate of acknowledgment in due form as required by the laws of Idaho attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 9:30 A. M., January 30, 1912.

(Signed) A. E. ROBINSON,
State Engineer.

Permit No. 2659.

CERTIFICATE OF COMPLETION OF WORKS.

To All Whom It May Concern:

This is to certify that Twin Falls Salmon River Land & Water Company, of Milner, County of Twin Falls and State of Idaho, the holder of Permit No. 2659, issued upon Application No. 3493, bearing date of priority of December 29, 1906, authorizing the diversion of 1500 second feet of the waters of Salmon River, County of Twin Falls, State of Idaho, for irrigation and domestic purposes, has fully complied with the provisions of the laws of the State of Idaho relating to the proof of completion of the works of diversion set out and described in said permit; that the dam constructed under the provisions of this permit is capable of diverting water at the rate of 1500 cubic feet per second; that the outlet tunnel from the reservoir has a capacity of 1500 cubic feet per second; that the main canal immediately below the outlet tunnel has a capacity of 1250 cubic feet per second; that the reservoir caused to be formed by the construction of the aforesaid dam has a capacity, exclusive of dead water, of 199,973 acre feet; that the point of diversion of said waters is South $56^{\circ} 43'$ West 6883' from the quarter corner common to sections 8 and 9, township 14 South, Range 15 East of Boise Meridian; and that the lands proposed to be irrigated by the use of said water are described as follows, to-wit: * * * * *

Witness my hand this 14th day of May, A. D.
1912.

A. E. ROBINSON,
State Engineer.

Bond: From John E. Hays, as principal, and H. L. Hollister, of Chicago, Illinois, and Geo. F. Sprague and I. B. Perrine, of Twin Falls, Idaho, as sureties, to the State of Idaho, for \$3,000.00, for the faithful completion of works of diversion as specified in application No. 3493 and Permit No. 2659, in the manner and form prescribed therein and within the time therein allowed.

Affidavit of justification of sureties in due form attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 3:00 p. m., May 14, 1907.

JAS. STEPHENSON, JR.,

State Engineer.

Approved May 14, 1907.

Jas. Stephenson, Jr.,

State Engineer.

Certificate in due form by State Engineer of the State of Idaho, dated the 19th day of April, 1915, that the foregoing documents, constituting Plaintiffs' Exhibit No. 3, are full, true and correct copies as the same appear on file in the State Engineer's office.

PLAINTIFFS' EXHIBIT NO. 4.

No. 4313.

APPLICATION FOR PERMIT

To Appropriate the Public Waters of the State of
Idaho.

1. Name of Applicant: John E. Hayes.

Postoffice address: Twin Falls. County: Twin
Falls. State: Idaho.

II. The financial resources of the applicant are:

- (a) Cash on hand \$5000.00 sale of Treasury Stock & Bonds.
- 2. The quantity of water claimed is 500 cubic feet per second.
- 3. Source of water supply: Salmon river, all flood, store and unappropriated waters of said stream and its numerous branches to be stored in reservoir to be erected on said stream. County of Twin Falls.
- 4. Location of point of diversion: SE 4 Sec. 18, T. 14 S. R. 15 E. B. M. Pt. of diversion bears N. 9° W. 1840 ft. from the cor. of Secs. 17, 18, 19 & 20, T. 14 S. R. 15 E. B. M.
- 5. To be used for:
 - I. Irrigation and domestic use:
 - (a) Amount of land to be irrigated: 150,000 acres.
 - (b) In the following legal subdivisions: T. 11 S. R. 14 E. Tps. 11, 12, 13 & 14 S. R. 15 E. T. 12 S. R. 14 E. Tps. 11, 12 and 13 S. R. 16 E. Tps. 11, 12 S. R. 17 E. Tps. 11-12 S. R. 18 E. B. M. See list appended.
- 6. Estimated cost of works: \$1,800,000.00.
- 7. Description of works for diversion:
 - I. Kind of works: Reservoir diversion dam and ditches.
 - II. Dimensions of works:
 - (a) Height of dam 200 feet, length of dam at top 1500 feet, length of dam at bottom 110 feet. Material used in construction: Concrete, stone, wood, earth and steel.

- (b) Capacity of reservoir: 300,000 acre feet.
 - (c) Size of headgate: Width 24 feet, height 7 feet.
 - (d) Conduit ditch, width at bottom 60 feet, width at water line 88 feet, depth of water 7 feet. Average grade per mile is 1 ft. Length of conduit is 25.7 miles, and it crosses the following quarter sections: See list below, to land described in 5 I (b) above which is the point of intended use.
8. Time required for the completion of the construction of such work is 5 years.
9. Time required for the complete application of the water to the proposed use is 4 additional years.

BE IT KNOWN That the undersigned hereby makes application for a permit to appropriate the public waters of the State of Idaho as herein set forth.

JOHN E. HAYES,
Applicant.

APPROVAL OF STATE ENGINEER.

The number of this permit is 3267.

Date of first receipt of application, 2:45 p. m., August 22, 1907.

Returned to applicant for correction September 21, 1907.

Corrected application received November 20, 1907.

Recorded in Book 9, page 3267. Approved November 23, 1907.

This is to certify that I have examined the within application for a permit to appropriate the public waters of the State of Idaho and hereby grant the

same, subject to the following limitations and conditions:

Good and sufficient bond to be filed in the sum of \$1,000 on or before January 22, 1908.

One-fifth of the work above specified to be completed on or before May 23, 1910.

The whole of said work to be completed on or before November 23, 1912.

The time for proof of beneficial use of water appropriated in accordance herewith, to extend to November 23, 1916.

Witness my hand this twenty-third day of November, 1907.

JAS. STEPHENSON, JR.,
State Engineer.

Warranty Deed: From John E. Hayes, of Denver, County of Denver, State of Colorado, to the Twin Falls Salmon River Land and Water Company, dated the 19th day of November, 1912. Conveys: "All that certain permit issued by the State of Idaho for the appropriation of 500 cubic feet per second of the waters of Salmon River, Twin Falls County, State of Idaho, dated November 20, 1907, numbered 3267, and recorded in Book 9 at page 3267, of the records of the State Engineer at his office in Boise, Idaho."

Certificate of acknowledgment in due form as required by the laws of Idaho is attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 9:00 a. m., Dec. 13, 1912.

A. E. ROBINSON,
State Engineer.

Permit No. 3267.

CERTIFICATE OF COMPLETION OF WORKS.

To All Whom It May Concern:

This is to certify that the Twin Falls Salmon River Land and Water Company, of Milner, County of Twin Falls and State of Idaho, the holder of Permit No. 3267, issued upon Application No. 4313, bearing date of priority of August 22, 1907, authorizing the diversion of 500 second feet of the waters of Salmon River, and its branches, County of Twin Falls, State of Idaho, for irrigation and domestic purposes, has fully complied with the provisions of the laws of the State of Idaho relating to the proof of completion of the works of diversion set out and described in said permit; that the dam constructed under this permit is capable of diverting water at the rate of 1500 cubic feet per second; that the outlet tunnel from the reservoir has a capacity of 1500 cubic feet per second; that the main canal immediately below the outlet tunnel has a capacity of 1250 cubic feet per second; that the reservoir caused to be formed by the construction of the aforesaid dam has a capacity, exclusive of dead water, of 199,973 acre feet; that the point of diversion of said waters is N. 9° W. 1840 feet from corner of sections 17, 18, 19 & 20, T. 14 S. R. 15 E. B. M., in the SE $\frac{1}{4}$ of Section 18, T. 14 S. R. 15 E. B. M.; that the said diversion works above referred to, including dam, tunnel and reservoir, are the identical diversion works referred to in the Certificate of Completion of Works heretofore issued by the State Engineer in connection with Permit No.

2659; and that the lands proposed to be irrigated by the use of said waters are described as follows, to-wit: * * * * *

Witness my hand this 25th day of January, A. D.
1913.

A. E. ROBINSON,
State Engineer.

Bond: From George F. Sprague (assignee of John E. Hayes), of Twin Falls, Idaho, as principal, and C. B. Hurtt and S. H. Hays, of Boise, Idaho, as sureties, to the State of Idaho, for \$1,000.00, for the faithful completion of works of diversion as specified in Application No. 4313 and Permit No. 3267, in the manner and form prescribed therein and within the time therein allowed.

Affidavit of justification of sureties in due form attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 3:06 p. m., January 20, 1908.

JAS. STEPHENSON, JR.,
State Engineer.

Certificate in due form by State Engineer of the State of Idaho, dated the 19th day of April, 1915, that the foregoing documents, constituting Plaintiffs' Exhibit No. 4, are full, true and correct copies as the same appear on file in the State Engineer's office.

PLAINTIFFS' EXHIBIT NO. 5.

No. 7466.

APPLICATION FOR PERMIT

To Appropriate the Public Waters of the State of
Idaho.

1. Name of applicant: D. C. MacWatters.
Postoffice address: Milner. County: Twin Falls.
State: Idaho.

II. The financial resources of the applicant are:

(d) Other resources: \$10,000.00.

2. The quantity of water claimed is 1000 cubic feet per second.
3. Source of water supply: Salmon River.
County of Twin Falls.
4. Location of point of diversion: NE $\frac{1}{4}$ Sec. 18,
Tp. 14 S. R. 15 E. Dam is N. 6° 41' W. 4169'
from SE corner Sec. 18, Tp. 14 S. R. 15 E.

5. To be used for:

I. Irrigation and domestic use:

(a) Amount of land to be irrigated: 132,744.-
36.

(b) In the following legal subdivisions: See
list herewith, "A."

6. Estimated cost of works: \$1,700,000.00.
7. Description of works for diversion:

I. Kind of works: Dam, tunnels, ditch.

II. Dimensions of works:

(a) Height of dam 220 feet, length of dam at
top 450 feet, length of dam at bottom 250
feet. Material used in construction: Con-
crete and rock.

- (b) Capacity of reservoir: 230,000 acre feet.
 - (c) Size of headgate: Width 14 feet, height 10 feet.
 - (d) Conduit tunnel, width at bottom 11 feet, width at water line 11 feet, depth of water 10 feet. Average grade per mile is 5.28 feet. Length of conduit is 12 miles and it crosses the following quarter sections: See list herewith, "B." Length of conduit refers to open canal section after leaving the tunnel. Canal section 50 feet wide on bottom, 70 feet at water line and 5 feet deep, to land described in 5 I (b) above which is the point of intended use.
- 8. Time required for the completion of the construction of such work is five years.
 - 9. Time required for the complete application of the water to the proposed use is four additional years.

BE IT KNOWN That the undersigned hereby makes application for a permit to appropriate the public waters of the State of Idaho as herein set forth.

D. C. MacWATTERS,

Applicant.

By S. H. HAYS, Agent.

APPROVAL OF STATE ENGINEER.

The number of this permit is 5519.

Date of first receipt of application: 3:20 p. m., September 7, 1909.

Returned to applicant for correction: October 7, 1909.

Corrected application received: December 4, 1909.
Recorded in Book 16, page 5519. Approved December 4, 1909.

This is to certify that I have examined the within application for a permit to appropriate the public waters of the State of Idaho and hereby grant the same, subject to the following limitations and conditions:

Good and sufficient bond to be filed in the sum of \$2,000.00 on or before February 2, 1910.

One-fifth of the work above specified to be completed on or before June 4, 1912.

The whole of said work to be completed on or before December 4, 1914.

The time for proof of beneficial use of water appropriated in accordance herewith, extended to December 4, 1918.

Witness my hand this fourth day of December, 1909.

JAS. STEPHENSON, JR.,

State Engineer.

Warranty Deed: Dated 30th day of September, 1914, from D. C. MacWatters, of Jerome, Lincoln County, Idaho, to Twin Falls Salmon River Land and Water Company. Conveys: "That certain Water Right evidenced by Permit No. 5519, issued by the State Engineer of Idaho, under date of December 4th, 1909, granting to said D. C. MacWatters the right to appropriate 1000 second feet of the waters of the Salmon River in the State of Idaho, as more particularly set forth in said permit, recorded in the

office of the State Engineer of Idaho, in Record of Water Permits, at page 5519."

Certificate of acknowledgment in due form as required by the laws of Idaho is attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 9:00 A. M., October 26, 1914.

HERBERT WING,
Acting State Engineer.

BOND: From Twin Falls Salmon River Land & Water Company, as principal, and The Title Guaranty & Surety Company, a corporation of Pennsylvania, surety, to the State of Idaho, for the sum of \$2,000.00; to secure the completion of the irrigation system specified in application numbered 7466 and permit numbered 5519. Said bond is in the form and is executed in the manner required by the laws of the State of Idaho.

Endorsed: Approved. Date, Feb. 1st, 1910.

JAS. STEPHENSON, JR.,
State Engineer.

Received and filed for record in the office of the State Engineer, 10:00 a. m., January 12, 1910.

JAS. STEPHENSON, JR.,
State Engineer.

Certificate in due form by State Engineer of the State of Idaho, dated the 19th day of April, 1915, that the foregoing documents, constituting Plaintiffs' Exhibit No. 5, are full, true and correct copies as the same appear on file in the State Engineer's office.

PLAINTIFFS' EXHIBIT NO. 6.

Plaintiffs' Exhibit No. 6 is a copy of the agreement between Twin Falls Salmon River Land and Water Company and the purchasers of water rights from said company, in due form as required by the provisions of the contract (Plaintiffs' Exhibit No. 2) between the State of Idaho and the Twin Falls Salmon River Land and Water Company. It also contains form of certificate of stock in Salmon River Canal Company, Limited, to be issued to purchasers of water rights. Said certificate is also in due form as required by the provisions of Plaintiffs' Exhibit No. 2.

PLAINTIFFS' EXHIBIT NO. 31.
DUTY OF WATER FOR ALFALFA.

Plat No.	Soil moisture at beginning of irrigation season. Per cent.	Precipitation during season in feet	Number of Irrigations	Length of irrigation season in days	Total water applied in acre feet	Soil moisture at close of season. Per cent.	Yield of cured hay in tons per acre	Tons of hay per acre foot of water
1	13.91	.299	3	78	1.1887	10.08	3.782	3.18
2	14.36	.299	4	76	1.5637	10.93	4.421	2.83
3	17.00	.299	6	87	1.9529	15.00	5.309	2.72
4	13.74	.299	7	103	2.6134	17.12	5.603	2.14
5	13.39	.299	10	99	2.9929	16.92	6.597	2.20
6	12.64	.299	11	110	3.7806	19.44	6.805	1.80

These plats were given their first irrigations about the middle of May, and all water was applied by the border method. The difference in amount of water applied caused a slight variation in time of blooming, the driest plats having

NOTE: In all of the tables in this bulletin the amounts given in the column "Total Water Applied" do not include precipitation.

DEFENDANT'S EXHIBIT NO. 2.

"HARRELL DITCH

SPARKS-HARRELL CO.

NOTICE OF LOCATION.

Sparks-Harrell Co.

Harrell Ditch.

Notice is hereby given, that the Sparks-Harrell Company, a corporation, organized and existing under the laws of the State of California, have on the first day of November, 1892, located and claims, five thousand miners' inches of water from the natural course and flow of Salmon River, in Elko County, Nevada, all for irrigation and domestic purposes.

From the point of diversion of the waters from said Salmon River (and where this notice is posted) the northeast corner of section 9, township 45 North, Range 54 East, M. D. M. Bears N. 50° 30' East, 22 chains.

The water was diverted from the river on Nov. 1st, 1892, by means of a ditch ten feet wide on top and four feet deep at the river and this ditch was constructed in an easterly direction about seven chains to an old slough, thence the line of ditch runs northerly about one mile in said slough which was cleaned out for the proper flow of water; from thence the line of ditch runs northeasterly about nine miles to its northern terminus in Section 31, Township 47 North, Range 65 East, M. D. M., and from the old slough northerly, the ditch will be ten feet wide and 3 feet deep, and have a grade of five feet to one mile, and the waters of the ditch will irrigate about 2000 acres of mesa land, and 2000 acres of bottom land between

the ditch and the river. The ditch is more particularly described by the accompanying plat, which is hereby made a part of this notice. The name of this ditch shall be the "Harrell Ditch."

THE SPARKS-HARRELL CO.

By Jno. Sparks, Prest.

State of Nevada,
County of Washoe,—ss.

John Sparks, being duly sworn, deposes and says: I am the President of the Sparks-Harrell Company, a corporation organized and existing under the laws of the State of California, and as such officer signed the name of said company to the foregoing water right location on Salmon River, Elko County, Nevada, and, having read its contents, further swear that the location was made by said company in its corporate name, for the uses and purposes therein named.

JNO. SPARKS, President,

The Sparks-Harrell Company.

Subscribed and sworn to before me this 28th day of November, 1892.

HENRY B. RULE,

(Seal) Notary Public, Washoe County, Nevada.

(Map attached showing location of ditch and lands to be irrigated therefrom.)

"UPPER VINEYARD DITCH

OWYHEE RIVER

WATER AND DITCH LOCATION NOTICE.

Notice is hereby given that the undersigned, The Sparks-Harrell Company, a corporation organized and existing under and by virtue of the laws of the State of California, and having its principal office

and place of business in the town of Visalia, County of Tulare, State of California, has this 6th day of May, 1899, appropriated 500 cubic feet per second of the waters of Salmon River in Township Forty-four (44) North, Range Sixty-three East M. D. M., the same being situated in, or flowing through Elko County, State of Nevada. Said water to be used for irrigation, domestic, power and other useful purposes upon lands described as follows, to-wit:

Parts of Sections	Section	Township Range	
		North	East
NE $\frac{1}{4}$ of	16	44	63
All of	15	"	"
NE $\frac{1}{4}$ of NW $\frac{1}{4}$	22	"	"
NW $\frac{1}{4}$ of NE $\frac{1}{4}$	22	"	"
SE $\frac{1}{4}$ of	10	"	"
NW $\frac{1}{4}$ of NW $\frac{1}{4}$	14	"	"
N $\frac{1}{2}$ of	11	"	"
SW $\frac{1}{4}$ of	11	"	"
NW $\frac{1}{4}$ of SE $\frac{1}{4}$	11	"	"
NW $\frac{1}{4}$ of NW $\frac{1}{4}$	12	"	"
SW $\frac{1}{4}$ of	1	"	"
NE $\frac{1}{4}$ of	1	"	"
SE $\frac{1}{4}$ of NW $\frac{1}{4}$	1	"	"

Said waters are to be conducted through a ditch which we intend to construct and maintain, to be known and called the Upper Vineyard Ditch.

Said ditch is described as follows, to-wit:

Commencing at a point on Salmon River in Section Eight (8) T. 44 N. R. 63 E., and running thence southeasterly across parts of Sections 8, 9, 16 and 15

to and upon Section 22; thence northeasterly across parts of sections 22, 15, 14, 12, 11 and 1; all in T. 44 N., R. 63 E., and terminating at the lower end in said Section 1. The upper head or terminus of said ditch is about two (2) miles above what is known as the "Vineyard House," and the lower terminus is near the head of the canyon below what is known as the "Vineyard Bottom" or "Ranch," and the length of said ditch is about seven and one-half ($7\frac{1}{2}$) miles, all of which fully appears in the plat of said ditch and land to be irrigated herewith annexed, which is made a part hereof.

In witness whereof, these presents are subscribed by the President and Secretary of said Company and the corporate seal attached, on the day and year first above written.

JOHN SPARKS, President.

ANDREW J. HARRELL, Secretary.

(Corporate Seal)

Map attached showing location of ditch and lands to be irrigated therefrom.)

State of Nevada,
County of Elko,—ss.

On the 25th day of May, A. D. 1899, personally appeared before me Edward C. McClellan, a Notary Public in and for said County, John Sparks and Andrew J. Harrell, personally known to me to be the persons described in, and whose names are subscribed to, and who executed the foregoing instrument, and who each personally acknowledged to me that as President and Secretary of The Sparks-Harrell Com-

pany, he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

In Witness Whereof, I have hereunto set my hand and affixed my Official Seal, the day and year last above written.

EDWARD C. McCLELLAN,

(Notarial Seal)

Notary Public.

Filed for record at request of E. C. McClellan on the 26th day of May, 1899, at 3 o'clock P. M.

C. A. WATKINS,
County Recorder.

"HARRELL DITCH.

SALMON RIVER.

WATER AND DITCH LOCATION NOTICE.

Notice is hereby given that the undersigned, The Sparks-Harrell Company, a corporation organized and existing under and by virtue of the laws of the State of California and having its principal office and place of business in the town of Visalia, County of Tulare, State of California, has appropriated 200 cubic feet per second of the waters of Salmon River for use on lands in Township 45, 46 and 47 North, Range 64 East, and Township 46 and 47 North, Range 65 East, Mount Diablo Base and Meridian, the same being situated in or flowing through Elko County, State of Nevada. Said water to be used for irrigation, domestic and other useful purposes upon lands described as follows, to-wit:

Parts of Sections	Section	Township	
		North	East
NE $\frac{1}{4}$ of NE $\frac{1}{4}$	9	45	64
E $\frac{1}{2}$ of SE $\frac{1}{4}$	4	"	"

W $\frac{1}{2}$ of SW $\frac{1}{4}$	3	“	“
NW $\frac{1}{4}$ of	3	“	“
SE $\frac{1}{4}$ of SE $\frac{1}{4}$	33	46	64
SW $\frac{1}{4}$ of	34	“	“
E $\frac{1}{2}$ of NW $\frac{1}{4}$	34	“	“
NW $\frac{1}{4}$ of NE $\frac{1}{4}$	34	“	“
E $\frac{1}{2}$ of	27	“	“
NW $\frac{1}{4}$ of	26	“	“
S $\frac{1}{2}$ of SW $\frac{1}{4}$	23	“	“
NE $\frac{1}{4}$ of SW $\frac{1}{4}$	23	“	“
E $\frac{1}{2}$ of NW $\frac{1}{4}$	23	“	“
E $\frac{1}{2}$ of	23	“	“
NW $\frac{1}{4}$ of	24	“	“
W $\frac{1}{2}$ of	13	“	“
NE $\frac{1}{4}$ of	13	46	64
E $\frac{1}{2}$ of	14	“	“
All of	12	“	“
E $\frac{1}{2}$ of	11	“	“
All of	1	“	“
E $\frac{1}{2}$ of	2	“	“
W $\frac{1}{2}$ of NW $\frac{1}{4}$	7	46	65
W $\frac{1}{2}$ of	6	“	“
NE $\frac{1}{4}$ of	6	“	“
NW $\frac{1}{4}$ of SE $\frac{1}{4}$	6	“	65
E $\frac{1}{2}$ of	35	47	64
All of	36	“	“
All of	25	“	“
E $\frac{1}{2}$ of	26	“	“
SE $\frac{1}{4}$ of	23	“	“
All of	24	“	“
SW $\frac{1}{4}$ of	19	47	65

S $\frac{1}{2}$ of SE $\frac{1}{4}$	19	“	“
SW $\frac{1}{4}$ of NW $\frac{1}{4}$	19	“	“
N $\frac{1}{2}$ of	30	“	“
NW $\frac{1}{4}$ of SE $\frac{1}{4}$	30	“	“
SW $\frac{1}{4}$ of	30	“	“
W $\frac{1}{2}$ of	31	“	“

Said water is being conducted through a ditch which we intend to construct and maintain, to be known and called The Harrell Ditch. Said ditch was started on November 1st, 1892, and recorded in Book 2, page 202, Water Records of Elko County, Nevada, according to law, and water therefrom used in irrigating lands in Sections 9, 4 and 3, T. 45 N., R. 64 E., and Sections 33, 34, 26 and 27, T. 46 N., R. 64 E., and in June, 1894, the ditch had been constructed and partly finished to the SE $\frac{1}{4}$ of Section 27, T. 46 N., R. 64 E.

September 22nd, 1897, a resurvey was made of the lower part of the ditch, the grade changed from 5 feet to 2 2-3 feet per mile, and size of 20 ft. on top, 10 ft. on bottom and 5 ft. deep, and a sufficient quantity of water is claimed to irrigate the lands heretofore described as to be irrigated therefrom.

This new Location Notice is made to describe all changes made from the survey of Nov. 1st, 1892, and give more definite description of the lands covered and to be irrigated therefrom; and a sufficient amount of water is claimed to irrigate said lands and claim such waters from November 1st, 1892.

Said ditch is described as follows, to-wit:

Commencing at a point on Salmon River from

whence the corner to Sections 3, 4, 9 and 10, T. 45 N., R. 64 E., bears N. 50° 30' E. 22 chains distant. At this point is a dam in the river and ditch, 15 ft. wide, 4 ft. deep, constructed about 7 chains easterly to what is known as the "Roland East Side Slough;" thence following in said slough, northeasterly about two miles upon the northwest quarter of Section 34, T. 46 N., R. 64 E. Thence the ditch starts again and is to be constructed as fast as practicable in a northeasterly direction to the northeast quarter of Section 30, T. 47 N., R. 65 E. The total length of said ditch, including said Roland East Side Slough, which forms a part thereof, and has been cleaned out and enlarged to a sufficient carrying capacity, is about thirteen (13) miles. The ditch as far as constructed is 20 ft. wide on top, 10 ft. wide on bottom and 4 ft. deep, but the right is claimed to enlarge said ditch, if necessary, to carry a sufficient amount of water to irrigate all of the aforesaid described lands apart of said lands have been irrigated by this corporation and its grantors prior to Nov. 1st, 1892, as is shown by the records of Water Rights of Elko County, Nevada, and this notice is not intended to waive such rights as have secured thereby, but to claim such right to an increased amount of water as shall be necessary to irrigate all lands lying under this ditch not irrigated prior to Nov. 1st, 1892, all of which fully appears in the plat of said ditch and land to be irrigated herewith annexed, which is made a part hereof.

IN WITNESS WHEREOF, These presents are subscribed by the President and Secretary of said

Company and the Corporate Seal attached, on the day and year first above written.

JOHN SPARKS, President.

ANDREW J. HARRELL, Secretary.

(Corporate Seal)

(Map attached showing location of ditch and lands to be irrigated therefrom.)

State of Nevada,
County of Elko,—ss.

On the 9th day of June, A. D. 1899, personally appeared before me, Edward C. McClellan, a Notary Public in and for said County, John Sparks and Andrew J. Harrell, personally known to me to be the persons described in, and whose names are subscribed to, and who executed the foregoing instrument, and who each personally acknowledged to me that as President and Secretary of The Sparks-Harrell Company he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal, the day and year last above written.

EDWARD C. McCLELLAN,

(Notarial Seal)

Notary Public.

Filed for record at request of E. C. McClellan on the 12th day of June, 1899, at 10 o'clock A. M.

C. A. WATKINS,

(County Recorder's Seal)

County Recorder.

State of Nevada,
County of Elko,—ss.

I, W. G. GREATHOUSE, the duly elected, qualified and acting Recorder and Ex-officio Auditor in and for the County of Elko, DO HEREBY CERTIFY that the above and foregoing sixteen (16) sheets contains a full, true and correct copies of the following Water Rights: HARRELL SALMON RIVER IRRIGATING DITCH, recorded in volume 2 of Miscellaneous Records at page 654; HARRELL DITCH, recorded in volume 2 of Water Rights at page 202; UPPER VINEYARD DITCH, recorded in volume 2 of Water Rights at page 340, and the HARRELL DITCH, recorded in volume 2 of Water Rights at page 343, Records of Elko County, State of Nevada.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal at my office in the County and State aforesaid, this 16th day of April, A. D. 1915.

(Official Seal) W. G. GREATHOUSE,
County Recorder and Ex-officio Auditor in
and for the County of Elko, State of Nevada.

10c Internal Revenue Stamp, duly cancelled, attached. .

State of Nevada,
County of Elko,—ss.

I, ROBERT B. HUNTER, the duly qualified and acting County Clerk of Elko County, State of Nevada, and ex-officio Clerk of the District Court of the Fourth Judicial District of the State of Nevada, in and for the County of Elko, State of Nevada, and the

official custodian of the records thereof, do hereby certify that W. G. Greathouse was duly elected County Recorder of Elko County, State of Nevada, at a general election held on the 3rd day of November, A. D. 1914, for the term of two years from the first Monday of January, A. D. 1915; that he has duly qualified as such County Recorder, and is now the duly qualified and acting County Recorder of the County of Elko, State of Nevada, and the official custodian of the records of said County, at this time.

I further certify that the signature attached to the foregoing certificate of the County Recorder is the true and genuine signature of the said W. G. Greathouse.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the said District Court, this 16th day of April, A. D. 1915.

(Official Seal) ROBERT B. HUNTER,
County Clerk, and Ex-officio Clerk of the District Court of the Fourth Judicial District of the State of Nevada, in and for the County of Elko.

By H. C. SPROULE,
Deputy Clerk.

(10c Internal Revenue Stamp, duly cancelled, attached.)

DEFENDANT'S EXHIBIT NO. 3.

“WATER AND DITCH LOCATION NOTICE.

“NOTICE is hereby given that the undersigned, THE SPARKS-HARRELL COMPANY, a corpora-

tion organized and existing under and by virtue of the laws of the State of California, and having its principal office and place of business in the town of Visalia, County of Tulare, State of California, has this 30th day of October, 1893, appropriated all of the waters of what is known as Hot Creek and Fall Creek flowing in Township 47 North, Range 67 East, M. D. M., the same being situated in or flowing through Elko County, State of Nevada. Said water to be used for irrigation, domestic and other useful purposes upon lands described as follows, to-wit:

Parts of Sections	Section	Township Range	
		North	East
Lots 3 and 4 of.....	5	47	67
NW $\frac{1}{4}$ of SE $\frac{1}{4}$	"	"	"
S $\frac{1}{2}$ of SE $\frac{1}{4}$	"	"	"
SE $\frac{1}{4}$ of SW $\frac{1}{4}$	"	"	"
N $\frac{1}{2}$ of SW $\frac{1}{4}$	"	"	"
Lots 1, 2 and 3 of.....	6	"	"
N $\frac{1}{2}$ of SE $\frac{1}{4}$	"	"	"
NE $\frac{1}{4}$ of SW $\frac{1}{4}$	"	"	"
N $\frac{1}{2}$ of NE $\frac{1}{4}$	8	"	"
SE $\frac{1}{4}$ of NE $\frac{1}{4}$	"	"	"

Said waters are to be conducted through two ditches which we intend to construct and maintain, to be known and called the Upper and Middle Hot Creek Ditches.

Said ditches are described as follows, to-wit: The head of the upper ditch to be at a point about ten chains below the Hot Creek Spring, from which point the corner to Sections 4, 5, 8 and 9, T. 47 N., R. 67 E.,

bears N. $271\frac{1}{2}^{\circ}$ W. 41.00 chains, thence extending west about 8 chains into Fall Creek channel and following said channel northwesterly to the NE $\frac{1}{4}$ of NW $\frac{1}{4}$ of Section 8, where it will leave the channel and be taken in a northwesterly direction, the western terminus to be in the NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of Section 6.

The southeast terminus of the Middle ditch is at a point on Hot Creek from whence the corner to Sections 4, 5, 8 and 9, T. 47 N., R. 67 E., bears N. $111\frac{1}{4}^{\circ}$ W. 23.50 chains, and extending northwesterly the northwest terminus being in the SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 5, T. 47 N., R. 67 E.

All of which fully appears in the plat of said ditches and land to be irrigated herewith annexed, which is made a part hereof.

In witness whereof, these presents are subscribed by the President and Secretary of said Company and the Corporate Seal attached, on the day and year first above written.

JOHN SPARKS, President.

ANDREW J. HARRELL, Secretary.

(Corporate Seal)

(Map attached showing locations of ditches and of lands to be irrigated.)

State of Nevada,
County of Elko,—ss.

On the 30th day of October, A. D. 1893, personally appeared before me, Edward C. McClellan, a Notary Public in and for said County, JOHN SPARKS and ANDREW J. HARRELL, personally known to me to be the persons described in, and whose

names are subscribed to, and who executed the foregoing instrument, and who each personally acknowledged to me that as President and Secretary of THE SPARKS-HARRELL COMPANY, he executed the same freely and voluntarily and for the uses and purposes therein mentioned

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal, the day and year last above written.

EDWARD C. McCLELLAN,
(Notarial Seal) Notary Public.

Endorsed: "State of Nevada, County of Elko. Filed for record at request of A. J. Harrell on the 14th day of Dec., 1893, at 9 o'clock A. M., and recorded in Book 2 of Water Rights, page 212 to 214, inclusive, records of said County.

GEO. H. MEIGO, County Recorder.

By Deputy."

(Township Plat of Township 47 North, Range 67 East, M. D. B. & M., is attached, showing locations of ditches and lands to be irrigated therefrom in said township.)

DEFENDANT'S EXHIBIT NO. 8.

"WATER AND DITCH LOCATION NOTICE.

NOTICE is hereby given that the undersigned, THE SPARKS-HARRELL COMPANY, a corporation organized and existing under and by virtue of the laws of the State of California, and having its principal office and place of business in the town of Visalia, County of Tulare, State of California, has

this 4th day of October, 1893, appropriated 11 cubic feet per second of the waters of the North, Middle and South Forks of Trout Creek, flowing through Section 3 of Township 44 North, Range 65 East, and Sections 23, 26, 35 and 36 of Township 45 North, Range 65 East, M. D. M., the same being situated in, or flowing through Elko County, State of Nevada. Said water to be used for irrigation, domestic and other useful purposes upon the lands described as follows, to-wit:

Parts of Sections	Section	Township Range	
		North	East
SW $\frac{1}{4}$ of.....	23	45	65
W $\frac{1}{2}$ of NW $\frac{1}{4}$	26	"	"
SW $\frac{1}{4}$ of.....	26	"	"
NE $\frac{1}{4}$ of.....	35	"	"
NW $\frac{1}{4}$ of	"	"	"
NE $\frac{1}{4}$ of SW $\frac{1}{4}$	"	"	"
W $\frac{1}{2}$ of SW $\frac{1}{4}$	"	"	"
NE $\frac{1}{4}$ of SE $\frac{1}{4}$	34	"	"
NE $\frac{1}{4}$ of NE $\frac{1}{4}$	3	44	"

Said waters are to be conducted through two ditches which we intend to construct and maintain, to be known and called respectively the Trout Creek Meadows Central Ditch No. 1, and the Trout Creek Meadows Upper Ditch No. 2. Said Central Ditch No. 1 to carry 8 cubic feet per second, and the Upper Ditch No. 2 to carry 3 cubic feet per second.

Said ditches are described as follows, to-wit:

Trout Creek Meadows Central Ditch No. 1, the upper, or Eastern terminus to be at a point from whence the corner to sections 25-26, 35 and 36, T.

45 N. R. 65 E. bears 6 chains West and 10 50-100 chains north. Thence it will be constructed in a southwesterly direction to a point 31 chains south and 32 chains west of said section corner, where it will cross and divert the waters of the Middle Fork of Trout Creek. Thence it will be constructed westerly about 25 chains and then northerly about two miles, the lower, or western terminus to be at a point in the NW $\frac{1}{4}$ of SW $\frac{1}{4}$ of section 23, T. 45 N. R. 65 E.

The upper or southern terminus of Trout Creek Meadows Upper Ditch No. 2 will be at a point on the south Fork of Trout Creek from whence the corner to sections 2-3, 34 and 35, Tps. 44 and 45 N. R. 65 E. bears N. 24° E. 16 chains distant. Thence the ditch will be constructed in a northerly course about 60 chains, the upper or northern terminus to be in the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of section 34, T. 45 N. R. 65 E. all of which fully appears in the plat of said ditch and land to be irrigated herewith annexed, which is made a part hereof.

In witness whereof these presents are subscribed by the President and Secretary of said Company and the Corporate Seal attached, on the day and year first above written.

JOHN SPARKS, President.

ANDREW J. HARRELL, Secretary.

(Corporate Seal.)

(Map attached showing locations of ditches and lands to be irrigated therefrom.)

State of Nevada,
County of Elko,—ss.

On the 4th day of October, A. D. 1893, personally appeared before me Edward C. McClellan, a Notary Public in and for said county, JOHN SPARKS and ANDREW J. HARRELL, personally known to me to be the persons described in, and whose names are subscribed to, and who executed the foregoing instrument, and who each personally acknowledged to me that as President and Secretary of THE SPARKS-HARRELL COMPANY he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal, the day and year last above written.

EDWARD C. McCLELLAN,
(Notarial Seal.) Notary Public.

Endorsed: "State of Nevada, County of Elko. Filed for record at request of A. J. Harrell on the 14 day of Dec. 1893, at 9 o'clock A. M. and recorded in Book 2 of Water Rights, page 218 to 220, inclusive, records of said county.

GEO. H. MEIGS, County Recorder,
By.....Deputy."

DEFENDANT'S EXHIBIT NO. 9.

"WATER AND DITCH LOCATION NOTICE.

"NOTICE is hereby given that the undersigned, THE SPARKS-HARRELL COMPANY, a corporation organized and existing under and by virtue of

the laws of State of California, and having its principal office and place of business in the town of Visalia, County of Tulare, State of California, has this 12th day of October, 1893, appropriated 20 cubic feet per second of the waters of Shoshone Creek, flowing through T. 47 N. Rgs. 64 and 65 E. M. D. M., the same being situated in, or flowing through Elko County, State of Nevada. Said water to be used for irrigation, domestic and other useful purposes upon lands described as follows, to-wit:

Parts of Sections	Section	Township Range	
		North	East
N $\frac{1}{2}$ of SE $\frac{1}{4}$	18	47	65
S $\frac{1}{2}$ of NW $\frac{1}{4}$	"	"	"
N $\frac{1}{2}$ of SW $\frac{1}{4}$	"	"	"
SW $\frac{1}{4}$ of SW $\frac{1}{4}$	"	"	"
S $\frac{1}{2}$ of NE $\frac{1}{4}$	13	"	64
SE $\frac{1}{4}$ of.....	"	"	"
E $\frac{1}{2}$ of SW $\frac{1}{4}$	"	"	"
W $\frac{1}{2}$ of NW $\frac{1}{4}$	14	"	"
N $\frac{1}{2}$ of NE $\frac{1}{4}$	"	"	"
SW $\frac{1}{4}$ of NE $\frac{1}{4}$	"	"	"

Said waters are to be conducted through two ditches which we intend to construct and maintain, to be known and called respectively the Shoshone Creek North Side Ditch and the Shoshone Creek South Side ditch, each ditch to carry 10 cubic feet per second of water.

Said ditches are described as follows, to-wit:

The eastern, or upper, terminus of the North Side ditch is at a point from whence the quarter section

corner between sections 17 and 18, T. 47 N. R. 65 E. bears 24 chains north and 32 chains west. Thence the ditch will be constructed in a westerly direction two and one-half miles, and its lower or western terminus will be in the NE $\frac{1}{4}$ of SW $\frac{1}{4}$ of section 13, T. 47 N. R. 64 E.

The eastern, or upper, terminus of the South Side ditch is at a point from whence the same quarter section corner bears 2 chains east and 19 chains north. Thence the ditch will be constructed in a south-westerly direction two miles, and the lower, or western, terminus will be in the E $\frac{1}{2}$ of NW $\frac{1}{4}$ of Section 14, T. 47 N. R. 64 E, all of which fully appears in the plat of said ditches and land to be irrigated herewith annexed, which is made a part hereof.

In witness whereof, these presents are subscribed by the President and Secretary of said Company and the Corporate Seal attached, on the day and year first above written.

JOHN SPARKS, President.

ANDREW J. HARRELL, Secretary.

(Corporate Seal.)

(Map attached showing locations of ditches and lands to be irrigated therefrom.)

State of Nevada,
County of Elko,—ss.

On the 1st day of November, A. D. 1893, personally appeared before me, Edward C. McClellan, a Notary Public in and for said county, JOHN SPARKS and ANDREW J. HARRELL, personally known to me to be the persons described in, and

whose names are subscribed to, and who executed the foregoing instrument, and who each personally acknowledged to me that as President and Secretary of THE SPARKS-HARRELL COMPANY he executed the same freely and voluntarily and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal, the day and year last above written.

EDWARD C. McCLELLAN,
(Notarial Seal.) Notary Public.

Endorsed: "State of Nevada, County of Elko. Filed for record at request of A. J. Harrell on the 14 day of Dec. 1893, at 9 o'clock, A. M. and recorded in book 2 of Water Rights, page 224 to 225, inclusive, records of said county.

GEO. H. MEIGS, County Recorder,
By.....Deputy."

The foregoing is all of the evidence introduced and proceedings had, except certain original exhibits that cannot be conveniently made a part of the printed transcript and are to be transmitted separate from the transcript to the Appellate Court.

Lodged September 20, 1916. W. D. McReynolds, Clerk, by Pearl E. Zanger, Deputy.

United States of America,
District of Idaho,—ss.

ORDER SETTLING STATEMENT.

It appearing that the within and foregoing state-

ment of evidence, as amended, was lodged in due time with the Clerk of this Court, and that notice of such lodgment and of the time of the proposed settlement thereof was given to the solicitors for plaintiffs, and it appearing that the said statement is true, complete and properly prepared.

It is therefore ordered, that the same be settled and allowed as a true, complete and correct statement of the evidence introduced in said cause, reduced to narrative form.

Dated this 7th day of October, 1916.

FRANK S. DIETRICH,
District Judge.

Filed Oct. 7, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

DECISION.

DIETRICH, DISTRICT JUDGE:

Subject to such prior rights as are possessed by the defendant, it is clear that the plaintiffs are entitled to the use of all the waters of Salmon River and its tributaries. At great cost, they have fully completed an irrigation system capable of utilizing the entire flow of the stream, and have need for it all. For the purpose of conserving the discharge during the non-irrigation seasons, they have provided a reservoir having an efficient capacity of approximately 180,000 acre feet. In compliance with the laws of the State of Idaho, they applied for and secured permits, No. 2659 for 1500 second feet, dated December 29,

1906; No. 3267 for 500 second feet, dated August 22, 1907; and No. 5509 for 1000 second feet, dated September 7, 1909. It is to be inferred that the total flow of the river, even in flood season, never reaches the amount of the first permit, and generally is but a small proportion thereof.

That the defendant has prior rights is conceded, and the real inquiry therefore is, of what do they consist. To this issue nearly all of the evidence has been directed. The defendant is, and since about 1885 it and its predecessors in interest have been the owners of large tracts of land partly in Idaho, but for the most part in Nevada, the extent and description of which are admitted. These lands were so selected as to control the water sources and natural meadows of an extensive mountainous stock range, and thus to control the range; upon this range the earlier proprietors maintained great herds of cattle. Some of the lands lie along the Salmon River, which might more properly be called "Salmon Creek", for in size it hardly rises to the dignity of a river. Its sources are in Nevada, and it flows in a northeasterly direction, emptying into the Snake River in Idaho. The plaintiffs' reservoir and point of diversion are upon the lower course of the river, in Idaho. It is a typical mountain stream, running through a narrow valley, which sometimes opens out into a considerable body of comparatively level land, and again contracts until it is a mere water channel. The altitude of the defendant's lands is approximately 5200 feet, and the growing season is so short and the like-

lihood of killing frosts in every month of the year is so great that agricultural operations must be confined largely to the raising of hay, and possibly grains of early maturity. It can hardly be said that any of the lands were ever occupied for residence purposes, but two or three "cow camps" were established for the use of range riders, and for holding some of the stock temporarily in the fall. Portions of the land were fenced, and were used for pasture, and for the cutting of wild hay for the horses used by the range riders. The amount of grain and tame hay produced prior to the inception of the plaintiffs' rights is almost negligible. Some ditches of considerable size and length were constructed, but much of the irrigation was carried on by putting temporary dams in the channel of the stream and adjacent sloughs, and then cutting openings in the banks, thus throwing the water out over the comparatively level portions of the land and letting it run continuously from the opening of the irrigation season up to the first part of July, when it was taken off so that the ground would dry out sufficiently for the cutting of hay. Thus one man attended to the irrigation of several thousand acres, no attempt being made to apply the water periodically or to change the application of the stream from one place to another. The ground was kept continuously drenched, and as a result only certain species of wild grasses grew which were adapted by nature to conditions of extreme moisture. No measuring devices were ever installed, so that we have substantially no data touching the amount

of water thus used prior to 1911, when certain observations were made by employees of the plaintiffs. Again in 1914 very comprehensive and detailed observations were made by the United States Geological Survey during the entire season from May 15th to September 15th. The points at which the defendant diverts and uses the water are many miles up the stream from the plaintiffs' reservoir, and there intervenes a long stretch of narrow canyon. All the lands irrigated by the defendant prior to the commencement of the construction of plaintiffs' system lie close to the river channel, and the water table being near the surface the return flow by percolation and surface drainage to the river channel is naturally very great, so that the defendant's primitive and apparently extravagant method of using water is not so prejudicial to the plaintiffs' rights as it might otherwise be. While the evaporation incident to such a use may be somewhat excessive, still, at that altitude, and for the short irrigation season during which water is applied, I am inclined to think the amount thus lost is inconsiderable.

I have thus far referred only to the lands which were under the ditches in existence at the time the plaintiff undertook its project; we now come to one of the principal, if not the chief, controversies involved in the suit, namely, the status of what is called the "High Line" or new "Harrell" canal. Briefly, the history of this canal is that as early apparently as 1892 a short ditch was constructed diverting water from the river into Roland slough, in Section 9, of

Township 45 North, Range 64 East. Nothing more appears to have been done until 1897, when a recognition line was run for several miles, and a definite location made for a distance of about a mile, commencing at a selected point of diversion on the Roland slough, in Sec. 34, some distance below the short ditch above referred to, and running in a northeasterly direction. This section of the canal was built, and from time to time additional sections were definitely located and constructed, with the result that in 1902 or 1903 there was a completed canal from the point of diversion, extending for a distance of about four miles to a point near the center of Section 13, Township 46 North, Range 64 East. From this time on until 1908 nothing at all was done, and the record discloses no act or word on the part of the proprietors signifying any intention further to extend the canal. In the meantime the plaintiff had secured two of its permits to utilize all the waters of the stream, had entered into an agreement with the State of Idaho for the construction of its extensive and costly irrigation system, under what is popularly known as the Carey Act, and, in compliance with its contract and the law, was selling a large number of contracts for water rights to future settlers. In 1908, after the plaintiffs' project was under full headway, the defendant put surveyors in the field, and thereafter from time to time prosecuted the work and extended the canal for approximately five miles, thus making it for the first time available for the irrigation of about four thousand acres of new land, lying above the level of the wild hay lands hereinbefore referred

to and some distance back from the river channel. The capacity of the canal is about ninety second feet, which is probably more than sufficient to carry all the water in the stream except at flood seasons.

The Courts should, and generally do, deal tenderly with the rights of the pioneer settler, who, with no resources other than his bare hands and a stout heart, ventures under the harsh conditions of frontier life to reclaim a piece of arid land and make for himself a home. Due diligence is always a question of circumstances, and, considering his poverty and the burdens he bears, great liberality is properly shown him in the matter of the time of completing his irrigation works and in the full application of the water to beneficial purposes. But by what course of reasoning can this principle be so extended as to make the defendant's right to the use of water by means of this newly constructed ditch, upon lands which had never theretofore been susceptible to irrigation, relate back fifteen or twenty years, and thus cut off the right of the plaintiffs? It is to be inferred that the successive proprietors of the lands have been men of considerable, if not great, wealth. The entire length of the constructed canal is but eight or nine miles, and no unusual difficulties were encountered in its construction; so far as appears, it was excavated in the earth, no rock work being necessary. It is manifest that such a ditch could very easily have been fully constructed in the course of two or three years, and surely to one who was financially able and encountered no unusual obstacles, five years for construction would be a most liberal allowance. If, as apparently

counsel for the defendant desire us to do, we consider the construction of the short channel connecting the river with Roland Slough as the commencement of the project, approximately twenty years elapsed from the time of its commencement to the date of its completion, and still an additional length of time is asked for the application of the water to beneficial uses. If we take 1897 as the date of commencement, substantially fifteen years were consumed in the construction of approximately eight miles of ditch. If under the circumstances such inactivity may be approved, it might well be asked what would constitute laches. But even more conclusive is the circumstance that for five or six years, from 1902 or 1903 until 1908, there was an absolute cessation of work, and no intimation was given of an intention to prosecute it further. No excuse is offered for the abandonment of construction during this long period, and upon the other hand it occurred at the very time when generally irrigated lands were very much in demand, and there was an unusual degree of interest in irrigation projects all through this section of the country. It was entirely reasonable for the plaintiffs to assume, when in 1906 they made investigation and applied for a permit, and when again in 1907 they applied for a second permit, that the defendant entertained no intention of extending the ditch or bringing new lands under irrigation. It is true that the ditch as it existed in 1906 had a capacity in excess of the requirements of the lands which could be served by it, but while in that fact there may be a possible sug-

gestion of an original intention on the part of the projectors to extend it to other lands, no such inference could be drawn touching the intention of new owners in 1906. Projects are frequently abandoned, and it was a very natural inference to draw from the fact that no work had been done for three or four years that if the projectors ever had entertained such purpose it had been given up. Besides, the method of applying water upon these lands was such that ditches or openings for the flow of water were not uncommonly very greatly in excess of what would ordinarily be deemed a necessary capacity, so that no really strong inference could be drawn from the excessive size of this particular ditch as to the intention of the owners touching its extension.

By an application of the same principle of diligence, the prior right of the defendant, insofar as concerns the lands which could be watered by ditches in 1907, must be limited to the area actually brought under irrigation prior to that time. Reasonable diligence must be exercised in applying water to beneficial purposes, as well as in carrying it to the point of intended use; the appropriation is fully consummated only by such application. Some of the ditches were constructed as early as 1885, most of them as early as 1889. Considering the financial ability of the proprietors, and the absence of any unusual difficulties in applying the water, it should I think be held that the extent of the use to which the water was applied in the course of from fifteen to twenty years after it was diverted, must be taken as the measure of the defendant's right.

Assuming then that defendant's rights are to be determined as of the irrigation season of 1906, we advance to consider the area of land then under irrigation and the quantity of water reasonably necessary therefor. The suggestion that the right is to be measured by the maximum capacity of the ditches is rejected. A water right is limited both by the capacity of the appropriator's conduits and the extent of his reasonable need; the right cannot be in excess of either the diversion or the beneficial use. The evidence touching the acreage under irrigation is widely conflicting; and perhaps that is to be expected where an appropriation is claimed for lands which were never cleared of the sagebrush or willows, and was never cultivated or cut over, but was used only for light pasturage. While it may be admitted that within reasonable bounds the application of water for the growth of wild grass for pasture alone may be held to be a beneficial use sufficient to support an appropriation, claims such as are here made should be subjected to the closest scrutiny. I am not inclined to regard the desultory flooding of sagebrush land with the high water of a stream, in the crude method here employed, for the mere purpose of adding slightly to the growth of sparse natural vegetation, as furnishing a sufficient basis for the award of a water right adequate for all purposes. It is rudimentary, of course, that water may be appropriated for any beneficial use; but beneficial use is a phrase of relative meaning. Many uses can be conceived of, which, in an attenuated sense, are beneficial, but which

would not support an appropriation; as a basis of a right the use must be of substantial benefit. It would require a high degree of courage, for instance, to affirm that the citizen can, to the exclusion of those who would use it for the raising of grains and fruits and other ordinary agricultural products, acquire the right to divert and spread out over thousands of acres of sagebrush land, upon which no homes are built, water at the rate of an inch per acre for the purpose of increasing the growth of wild grass from one-twentieth of a ton to one-tenth of a ton per acre. The use would in a literal sense be beneficial, but the benefit would be insignificant.

Any detailed discussion of the question of the acreage for which water should be awarded would exceed the reasonable length of an opinion, and I do not attempt it. Upon consideration I have concluded that, subject to the limitations hereinafter expressed, a prior right should be recognized in the defendant for 3,000 acres of hay and grain land, and 2,500 acres of pasture.

It remains to consider the quantity of water reasonably necessary for this purpose. In the nature of the case the question is not free from difficulty; and the evidence leaves much to be desired. Valuable information has been scientifically gathered in the last few years touching the duty of water upon cultivated lands and in the raising of tame grasses, but little attention has been given to the subject insofar as it pertains to wild meadow and pasture lands. We do the best we can with the material we have. The year

1914 appears to have been a fairly representative season in every way, and the defendant had unlimited freedom in the use of water. During the entire season from May 15th to September 15th it diverted a total of 17,206 acre feet. I cannot believe that there is any serious need for water at such an elevation prior to the first of May, and if we assume that the diversion during the first half of May equalled that of the latter half, 1604 acre feet should be added, making a total of 18,810 acre feet for the entire season from May 1st to September 15th. Assuming that the quantity which was diverted under the High Line canal prior to May 15th was the same as that for the last half of the month, of the total diversion for the season an amount equal to 7493 acre feet was diverted through the High Line canal, and the residue, namely, 11,317 acre feet, represents the aggregate of all other diversions. If we further assume that the water was applied only to lands that were irrigated in 1906, and if we further allow 1183 feet for use upon the land which was served by the High Line canal in that year, we would have a total use in 1914, to satisfy rights which may be said to be prior to those of the plaintiffs, of 12,500 acre feet. The net loss to the stream from this use, after giving credit for the return flow, was probably between 3500 and 4000 feet.

I am not unmindful of the possibility that with this water some lands were irrigated which were not under irrigation in 1906, or of the other possibility that some lands irrigated in 1906 were neglected in

1914. Let us, therefore, approach the question from a different angle. If we assume, as I am inclined to do, that three acre feet would be a reasonable seasonal allowance to be made for hay and grain land, and one and one-half acre feet for pasture, the quantity required would be 9000 acre feet for the hay and grain land and 3750 feet for pasture, or a total of 12,750 feet.

Again, suppose we take the popular view, which was once almost universal in this country, and which is still widely prevalent, that it requires an inch to the acre, or a second foot to fifty acres, flowing continuously during the actual irrigation season, for the proper irrigation of average lands and crops. Here the season of irrigation need for wild hay and for pasture, as disclosed by the defendant's actual practice for over fifteen years, is about sixty days. One hundred and ten second feet, that is, water at the rate of an inch to the acre for 5500 acres, flowing continuously for sixty days, would be the equivalent of approximately 13,000 acre feet. Perhaps I should add in this connection that I do not look with favor upon the suggestion that after the grasses have matured the defendant can hold the water on the lands indefinitely to keep them green, awaiting the owner's convenience for harvesting the crop. I cannot regard this as a beneficial use within contemplation of the law.

My conclusion is that the defendant is entitled to a prior right of 12,500 acre feet, the amount to be diverted during the irrigation season at such times and in such quantities as its needs may require, and

to be utilized upon the lands which were irrigated prior to the season of 1907. No substantial reason occurs to me for distributing the right to different dates of appropriation, and unless some consideration is called to my attention which I have overlooked, I am inclined to direct that the decree recite only that the entire amount so awarded was appropriated at different times, all prior to the inception of the plaintiffs' rights, in 1906. The defendant will be awarded an additional right of 12,000 acre feet, through the High Line canal, the right to date from May 1, 1911.

The plaintiff will be awarded rights in harmony with its permits, as of the dates and amounts thereof, up to an aggregate of 235,000 acre feet, to be measured at the point where the water is delivered into the canal system from the reservoir. Computation is made substantially upon the basis of two and three-fourths acre feet, for 73,000 acres of land, and an additional allowance of fifteen per cent for loss by evaporation and seepage in the main canal and laterals. If it be said that a witness for the plaintiffs estimated their need at one and one-half second feet per acre, the reply is that the real plaintiff, the Twin Falls Salmon River Land and Water Company, by its contract with the settlers, agreed to provide a supply at the rate of two and three-fourths acre feet, and this amount I deem to be reasonably necessary. The altitude is lower than at the defendant's lands, and not only is the irrigation season longer, but the precipitation is less. Possibly a little more water is required for the raising of wild hay than for

grain, but I am not convinced that more is required for one crop of wild hay than for three crops of alfalfa. I am unwilling to award three second feet for defendant's grain and hay lands, and only one and one-half acre feet generally for the lands upon plaintiffs' project. Such a course would be inconsistent. In weighing the plaintiffs' testimony upon the point the fact cannot be overlooked that it is deeply interested in securing an adjudication of the highest possible duty for water. Always in water suits, where there is insufficient water to satisfy the claims of all, manifestly the later claimants must, if they are to secure any water at all, keep down the amount of the earlier appropriations. But, of more importance here, the plaintiff is under the pressure of another consideration, the cogency of which is recognized and commented upon in the defendant's brief. It is not a user, but a vender, of water. In a short time presumably it will withdraw from all responsibility by turning its system over to the vendees, the settlers. It now has a suit pending with them in this Court, in which it practically concedes that its available water supply in ordinary years falls far below two and three-fourths acre feet for the 73,000 acres sold, and urges that it sold nothing but undivided shares in the system; and, of course, if that view be correct, it has no selfish interest in the amount of water to be awarded. As an alternative view, it urges that it sold only so much water per acre as may be found to be reasonably necessary for the irrigation of the land, and upon that assumption

it seeks a judicial finding that much less than two and three-fourths acre feet is sufficient. Under the circumstances I am not inclined to accept as conclusive the meager direct testimony which it has offered, but base my finding upon all the evidence in the case, both direct and indirect, weighed in the light of the common knowledge which has come from many years residence in the irrigated section of the state, and a not inconsiderable experience in water litigation. It is hardly necessary to add that in awarding so large a right to the plaintiff there is no implication that there is sufficient water in the stream to supply it. Upon the other hand, it is probably true that in ordinary years the right is very greatly in excess of the available supply.

Possibly it should be suggested that if the defendant should desire to abandon use on its hay and meadow lands, and transfer its right to the High Line canal, I see no reason why the transfer should be enjoined, provided the new use does not enlarge the net loss to the stream at the plaintiff's intake. I shall be willing to consider further suggestions upon this point, if the defendant desires a provision in the decree to cover it. It would doubtless require an adjudication of the respective amounts of the return flow. Counsel for the plaintiffs are directed to prepare a draft of decree and submit the same to opposing counsel before offering it for signature.

Endorsed: Filed July 7, 1915.

A. L. Richardson, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

DECREE.

This cause came on to be further heard at this term, the same having heretofore been submitted, and the Court's decision having heretofore been filed herein; and thereupon, upon consideration thereof, IT IS ORDERED, ADJUDGED AND DECREED, as follows, viz:

1. That the extent and relative dignity of the rights of the several parties hereto to use for irrigation purposes the waters of what is known as Salmon River or Salmon Creek, and its tributaries, which stream flows in a northerly direction from the State of Nevada into the State of Idaho, and some of the tributaries of which are in one State and some in the other, are defined as follows:

(A) *Twin Falls Salmon River Land and Water Company, a corporation, and Salmon River Canal Company, Limited, a corporation.*

Subject to the prior right of the defendant, Vineyard Land and Stock Company, a corporation, to use 12,500 acre feet, as hereinafter more fully appears, the plaintiffs, Twin Falls Salmon River Land and Water Company and Salmon River Canal Company, Limited, corporations, have the right to use the waters of said stream and its tributaries at the rate of 1500 cubic feet per second under Permit No. 2659 issued by the State Engineer of the State of Idaho, said right dating from December 29th, 1906, and further to use 500 cubic feet per second of the waters of said stream under Permit No. 3267 issued by the

State Engineer of the State of Idaho, such right dating from August 22nd, 1907; and further the right to use 1,000 cubic feet per second of the waters of said stream, under Permit No. 5519 issued by the State Engineer of the State of Idaho, said right to date from September 7th, 1909; the water to be diverted under each and all of said rights at the outlet of the plaintiffs' reservoir at or immediately above what is known as the Salmon River dam at the lower end of such reservoir; provided, however, that the maximum aggregate diversion by said plaintiffs for any one irrigating season shall not exceed 235,000 acre feet, the same to be measured at said point of diversion. Said water was appropriated for and is to be used in the irrigation of lands embraced in what is known as the Salmon River Carey Act Project, of which said lands the following is a general description, to-wit:

Township 10 South, Range 15 East, B. M.

S $\frac{1}{2}$ and NE $\frac{1}{4}$ of Sec. 31.

S $\frac{1}{2}$ and S $\frac{1}{2}$ of NW $\frac{1}{4}$ of Sec. 32.

All of Sec. 33.

All of Sec. 34.

All of Sec. 35.

All of Sec. 36.

Township 10 South, Range 16 East, B. M.

All of Sec. 31.

SE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 32.

S $\frac{1}{2}$ of Sec. 33.

S $\frac{1}{2}$ of Sec. 34.

Township 11 South, Range 14 East, B. M.

S $\frac{1}{2}$ of SE $\frac{1}{4}$ of Sec. 9.

S $\frac{1}{2}$ of S $\frac{1}{2}$ of Sec. 10.

S $\frac{1}{2}$ of SW $\frac{1}{4}$, Sec. 11.

SE $\frac{1}{4}$, Sec. 11.

All of Sections 12, 13, 14, 15 and 16.

SE $\frac{1}{4}$ and part of NE $\frac{1}{4}$, Sec. 17.

S $\frac{1}{2}$ and part of N $\frac{1}{2}$, Sec. 19.

All of Sections 20, 21, 22, 23, 24, 25, 26, 27, 28
and 29.

E $\frac{1}{2}$ and NW $\frac{1}{4}$, Sec. 33.

All of Sections 34, 35 and 36.

Township 11 South, Range 15 East, B. M.

All of Sections 1, 2, 3, 4 and 5.

S $\frac{1}{2}$ and part of NE $\frac{1}{4}$, Sec. 6.

All of Sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17,
18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30,
31, 32, 33, 34, 35 and 36.

Township 11 South, Range 16 East, B. M.

SE $\frac{1}{4}$, Sec. 1.

SW $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 1.

S $\frac{1}{2}$, Sec. 2.

SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 2.

All of Sections 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27,
28, 29, 30, 31, 32, 33, 34, 35 and 36.

Township 11 South, Range 17 East, B. M.

All of Sec. 7.

S $\frac{1}{2}$, Sec. 8.

S $\frac{1}{2}$ of N $\frac{1}{2}$, Sec. 8.

Lots 2, 3 and 4, Sec. 8.

S $\frac{1}{2}$, Sec. 9.

S $\frac{1}{2}$ of N $\frac{1}{2}$, Sec. 9.

W $\frac{1}{2}$, Sec. 14.

W $\frac{1}{2}$ of SE $\frac{1}{4}$, Sec. 14.

SE $\frac{1}{4}$ of SE $\frac{1}{4}$, Sec. 14.

S $\frac{1}{2}$, Sec. 15.

S $\frac{1}{2}$ of N $\frac{1}{2}$, Sec. 15.

NW $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 15.

All of Sections 16, 17, 18, 19, 20, 21, 22, 23, 24, 25,
26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36.

Township 11 South, Range 18 East, B. M.

Lots 3 and 4, Sec. 19.

Lots 1, 2, 3 and 4, Sec. 30.

Township 12 South, Range 14 East, B. M.

All of Sections 1, 2 and 3.

E $\frac{1}{2}$, Sec. 4.

E $\frac{1}{2}$ and NW $\frac{1}{4}$, Sec. 10.

All of Sections 11, 12 and 13.

E $\frac{1}{2}$, Sec. 14.

NW $\frac{1}{4}$ and part of SW $\frac{1}{4}$, Sec. 14.

Part of NE $\frac{1}{4}$, Sec. 23.

E $\frac{1}{2}$ and NW $\frac{1}{4}$, Sec. 24.

Part of SW $\frac{1}{4}$, Sec. 24.

E $\frac{1}{2}$ and part of NW $\frac{1}{4}$, Sec. 25.

Township 12 South, Range 15 East, B. M.

All of Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13,
14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26,
27, 28, 29 and 30.

E $\frac{1}{2}$ and part of NW $\frac{1}{4}$, Sec. 31.

All of Sections 32, 33, 34, 35 and 36.

Township 12 South, Range 16 East, B. M.

All of Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13,

14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26,
27, 28, 29, 30, 31, 32, 33, 34, 35 and 36.

Township 12 South, Range 17 East, B. M.

All of Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11.

N $\frac{1}{2}$, Sec. 12.

N $\frac{1}{2}$ and SW $\frac{1}{4}$, Sec. 15.

N $\frac{1}{2}$ and NW $\frac{1}{4}$, Sec. 15.

All of Sections 16, 17, 18, 19 and 20.

N $\frac{1}{2}$ and SW $\frac{1}{4}$, Sec. 21.

N $\frac{1}{2}$ and SW $\frac{1}{4}$, Sec. 29.

All of Section 30.

N $\frac{1}{2}$ and SW $\frac{1}{4}$, Sec. 31.

Lots 1, 2 and 3, Sec. 31.

Township 12 South, Range 18 East, B. M.

Lots 2, 3, 4, 5, 6 and 7, Sec. 6.

S $\frac{1}{2}$ of NE $\frac{1}{4}$, Sec. 6.

NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Sec. 6.

SE $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 6.

E $\frac{1}{2}$ of SW $\frac{1}{4}$, Sec. 6.

Township 13 South, Range 15 East, B. M.

All of Sections 1, 2, 3, 4 and 5.

Part of E $\frac{1}{2}$, Sec. 6.

Part of E $\frac{1}{2}$, Sec. 7.

All of Sections 8, 9, 10, 11, 12, 13, 14, 15, 16
and 17.

E $\frac{1}{2}$ and part of W $\frac{1}{2}$, Sec. 18.

E $\frac{1}{2}$ and part of W $\frac{1}{2}$, Sec. 19.

All of Sections 20, 21, 22, 23, 24, 25, 26, 27, 28, 29
and 30.

E $\frac{1}{2}$ and part of W $\frac{1}{2}$, Sec. 31.

All of Sections 32, 33, 34, 35 and 36.

Township 13 South, Range 16 East, B. M.

NE $\frac{1}{4}$ and W $\frac{1}{2}$, Sec. 1.

All of Secs. 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11.

W $\frac{1}{2}$, Sec. 12.

N $\frac{1}{2}$, Sec. 14.

All of Sections 15, 16, 17, 18, 19, 20 and 21.

W $\frac{1}{2}$, Sec. 22.

All of Sections 27, 28, 29, 30, 31, 32 and 33.

SE $\frac{1}{4}$ and W $\frac{1}{2}$, Sec. 34.

SW $\frac{1}{4}$, Sec. 35.

Township 14 South, Range 15 East, B. M.

All of Sections 1, 2, 3, 4 and 5.

E $\frac{1}{2}$ and part of W $\frac{1}{2}$, Sec. 6.

E $\frac{1}{2}$, Sec. 7.

Part of NW $\frac{1}{4}$, Sec. 7.

All of Sections 8, 9, 10, 11, 12, 13, 14, 15, 16
and 17.

SE $\frac{1}{4}$, Sec. 18.

Part of NE $\frac{1}{4}$, Sec. 18.

NE $\frac{1}{4}$, Sec. 20.

All of Sections 21, 22 and 23.

N $\frac{1}{2}$ and SW $\frac{1}{4}$ of Sec. 24.

N $\frac{1}{2}$, Sec. 26.

N $\frac{1}{2}$, Sec. 27.

N $\frac{1}{2}$, Sec. 28.

Township 14 South, Range 16 East, B. M.

All of Sections 3, 4, 5, 6, 7, 8, 9 and 10.

NW $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 11.

W $\frac{1}{2}$ of NW $\frac{1}{4}$, Sec. 11.

NE $\frac{1}{4}$ of NW $\frac{1}{4}$, Sec. 11.

NW $\frac{1}{4}$, Sec. 15.

NW¼ of NE¼, Sec. 15.

All of Sections 16, 17 and 18.

All of said lands and said point of diversion being in the State of Idaho.

(b) *Vineyard Land and Stock Co. (Prior Right)*.

IT IS FURTHER ADJUDGED AND DECREED That the defendant Vineyard Land and Stock Company, a corporation, as a right superior to each and all rights of the plaintiffs, is entitled annually to use 12,500 acre feet of the waters of said stream, said right representing and comprising all of the appropriations of the defendant and its predecessors in interest prior to the year 1907, said appropriations having been made at different dates, all prior to the initiation of any rights by the plaintiffs. And it appearing that said appropriations were all made for lands contiguous to or in the close vicinity of said stream or contiguous to or in close vicinity of tributaries of said stream from which the water used on said lands was diverted, which said lands are hereinafter described, and that the water embraced in said appropriations was always, up to the time of the initiation of the plaintiffs' said rights, used upon said lands, and that the net loss to the flow of the stream by the use upon said lands of said 12,500 acre feet does not ordinarily exceed 4,000 acre feet, and that the net loss of the diversion of said water to the higher and more distant lands to which defendant has sought to apply a large portion thereof since the initiation of the plaintiffs' rights would be very much in excess of 4,000 acre feet, IT IS FURTHER DE-

CREED that the defendant's said right, and the whole thereof, is restricted to the lands for which said appropriations were made, which lands it is impracticable to describe by meets and bounds, but the same are included within the following legal subdivisions, although constituting in many cases only a small part of the subdivision, to-wit:

IN THE STATE OF IDAHO.

Township 15 South, Range 17 East, B. M.

N $\frac{1}{2}$, NW $\frac{1}{4}$, Sec. 24.

N $\frac{1}{2}$, NE $\frac{1}{4}$, Sec. 23.

SE $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 23.

SW $\frac{1}{4}$, SW $\frac{1}{4}$, Sec. 26.

W $\frac{1}{2}$, NW $\frac{1}{4}$, Sec. 35.

E $\frac{1}{2}$ of E $\frac{1}{2}$, NE $\frac{1}{4}$, Sec. 34.

Township 16 South, Range 17 East, B. M.

SE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 3.

E $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 10.

E $\frac{1}{2}$ SE $\frac{1}{4}$, Sec. 10.

W $\frac{1}{2}$ of SW $\frac{1}{4}$ NW $\frac{1}{4}$, Sec. 11.

W $\frac{1}{2}$ of NW $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 11.

E $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 15.

E $\frac{1}{2}$ SE $\frac{1}{4}$, Sec. 15.

E $\frac{1}{2}$ of W $\frac{1}{2}$ SE $\frac{1}{4}$, Sec. 15.

E $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 22.

E $\frac{1}{2}$ of W $\frac{1}{2}$ NE $\frac{1}{4}$, Sec. 22.

E $\frac{1}{2}$ SE $\frac{1}{4}$, Sec. 22.

N $\frac{1}{2}$ SE $\frac{1}{4}$, Sec. 12.

N $\frac{1}{2}$ of N $\frac{1}{2}$ SW $\frac{1}{4}$, Sec. 12.

N $\frac{1}{2}$ of NE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 11.

NW $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 11.

S $\frac{1}{2}$ of SW $\frac{1}{4}$ NE $\frac{1}{4}$, Sec. 11.

NE $\frac{1}{4}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 11.

Township 16 South, Range 18 East, B. M.

NW $\frac{1}{4}$ NW $\frac{1}{4}$, Sec. 8.

SE $\frac{1}{4}$ NE $\frac{1}{4}$, Sec. 7.

S $\frac{1}{2}$ of SW $\frac{1}{4}$ NE $\frac{1}{4}$, Sec. 7.

NW $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 7.

N $\frac{1}{2}$ SW $\frac{1}{4}$, Sec. 7.

IN THE STATE OF NEVADA.

Township 47 North, Range 67 East, Mt. D. M.

S $\frac{1}{2}$ of NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 14.

S $\frac{1}{2}$ of SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 14.

N $\frac{1}{2}$ of NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14.

S $\frac{1}{2}$ of SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 15.

N $\frac{1}{2}$ of NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 15.

S $\frac{1}{2}$ of NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15.

SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15.

S $\frac{1}{2}$ of SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 16.

Township 47 North, Range 65 East, Mt. D. M.

SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11.

E $\frac{1}{2}$ of SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 10.

NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 15.

E $\frac{1}{2}$ of NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 15.

E $\frac{1}{2}$ of NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15.

SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 15.

NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 22.

S $\frac{1}{2}$ of NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 21.

NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 21.

NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 21.

N $\frac{1}{2}$ of NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 21.

S $\frac{1}{2}$ of SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 16.

SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 17.

S $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 17.

N $\frac{1}{2}$ of SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 18.

S $\frac{1}{2}$ of N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 18.

N $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 18.

N $\frac{1}{2}$ of SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 18

S $\frac{1}{2}$ of S $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 18.

Township 47 North, Range 64 East, Mt. D. M.

NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 13.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 13.

SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 13.

NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 24.

NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 24.

W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 23.

W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 23.

E $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 23.

W $\frac{1}{2}$ of E $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 26.

W $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 26.

E $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 26.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 26.

W $\frac{1}{2}$ of E $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 35.

W $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 35.

E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 35.

NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 35.

E $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 35.

Township 46 North, Range 64 East, Mt. D. M.

W $\frac{1}{2}$ of SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1.

W $\frac{1}{2}$ of W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 1.

E $\frac{1}{2}$ Sec. 2.

E $\frac{1}{2}$ of E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 2.

W $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 12.

E $\frac{1}{2}$ Sec. 11.

E $\frac{1}{2}$ of E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 11.

SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11.

W $\frac{1}{2}$ of NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 13.

All of Sec. 14.

W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 23.

W $\frac{1}{2}$ Sec. 23.

E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 22.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 26.

NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 26.

W $\frac{1}{2}$ of SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 26.

E $\frac{1}{2}$ of NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 27.

S $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 27.

W $\frac{1}{2}$ of E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 27.

W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 27.

E $\frac{1}{2}$ of E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 27.

W $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 27.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 34.

W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 34.

NW $\frac{1}{4}$ Sec. 34.

N $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 34.

SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 34.

S $\frac{1}{2}$ of NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 33.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 33.

Township 45 North, Range 64 East, Mt. D. M.

W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 3.

W $\frac{1}{2}$ of E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 3.

E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 4.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 4.

SE $\frac{1}{4}$ Sec. 4.

W $\frac{1}{2}$ E $\frac{1}{2}$ Sec. 9.

E $\frac{1}{2}$ of E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 9.

W $\frac{1}{2}$ of E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 16.

W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 16.

E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 16.

SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 16.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 16.

W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 16.

SW $\frac{1}{4}$ Sec. 16.

NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 21.

NW $\frac{1}{4}$ Sec. 21.

S $\frac{1}{2}$ of NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 20.

SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 20.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 20.

E $\frac{1}{2}$ of NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 20.

SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 20.

S $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 20.

NW $\frac{1}{4}$ of NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 29.

E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 29.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29.

NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29.

NW $\frac{1}{4}$ of SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 30.

NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 31.

S $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 31.

NW $\frac{1}{4}$ of NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 31.

Township 44 North, Range 63 East, Mt. D. M.

NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1.

W $\frac{1}{2}$ of SE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1.

SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1.

NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 1.

NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 2.

SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 2.

NW $\frac{1}{4}$ Sec. 11.

N $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 11.

SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 11.

E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 10.

SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 10.

S $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 10.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 9.

S $\frac{1}{2}$ of NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 9.

E $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 9.

N $\frac{1}{2}$ Sec. 15.

W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 15.

E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 15.

E $\frac{1}{2}$ of W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 15.

NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 16.

W $\frac{1}{2}$ of NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 22.

NE $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 22.

SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 34.

SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 33.

Township 43 North, Range 63 East, Mt. D. M.

W $\frac{1}{2}$ of W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 3.

W $\frac{1}{2}$ Sec. 3.

NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 3.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 3.

W $\frac{1}{2}$ of W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 11.

W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 11.

E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 10.

NW $\frac{1}{4}$ Sec. 14.

NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14.

E $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 14.

SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 14.

W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 23.

SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 3.

S $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 3.

N $\frac{1}{2}$ of SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 4.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 4.

NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 4.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 4.

Township 45 North, Range 63 East, Mt. D. M.

N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 36.

Township 46 North, Range 65 East, Mt. D. M.

W $\frac{1}{2}$ of SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 23.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 23.

W $\frac{1}{2}$ of E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 26.

E $\frac{1}{2}$ of W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 26.

E $\frac{1}{2}$ of W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 26.

E $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 26.

E $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 35.

W $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 35.

W $\frac{1}{2}$ of NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 35.

E $\frac{1}{2}$ of NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 35.

W $\frac{1}{2}$ of SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 35.

That the water which the defendant is entitled to divert under its said appropriations to the aggregate amount of 12,500 acre feet for use upon such portion of the lands above described as was reclaimed thereby prior to the year 1907, shall be diverted from the channel of Salmon River or Salmon Creek and its tributaries through ditches, canals, or other conduits,

provided with suitable measuring devices for measuring the amount of water diverted from the channel of such streams.

(c) *Vineyard Land and Stock Company.*

(Subsequent Right.)

And, subject to the aforesaid rights of the plaintiffs, said defendant is entitled annually to divert and use 12,000 acre feet of the water of said Salmon River or Salmon Creek, said right to date from May 1st, 1911, the same being subsequent and subordinate to the several rights of the plaintiffs. The water embraced in this right is to be diverted from the stream by means of what is known as the High Line or Harrell Canal, extending from a point in the E½ of the NW¼ of Section 34, Township 46 North, Range 64 East, to a point in the NE¼ of Section 30, Township 47 North, Range 65 East, in the State of Nevada, and to be used upon the following described lands situated in said State of Nevada, to-wit:

Township 47 North, Range 64 East, Mt. D. M.

E½ NE¼ Sec. 23.

SE¼ SE¼ Sec. 23.

E½ NE¼, SW¼ NE¼, SE¼, S½ NW¼ Sec. 24.

NW¼ NW¼, E½ SW¼, SW¼ SW¼ Sec. 24.

E½ NE¼, NW¼ NE¼, N½ NW¼, SW¼ NW¼,

SW¼ SE¼, S½ SW¼, NW¼ SW¼ Sec. 25.

W½, S½ NE¼, NW¼ NE¼, SE¼ Sec. 36.

Township 47 North, Range 65 East, Mt. D. M.

SW¼ Sec. 19.

SW¼ SE¼ Sec. 19.

SW¼ NW¼ Sec. 19.

SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 29.

N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 29.

W $\frac{1}{2}$ Sec. 31.

NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 31.

W $\frac{1}{2}$ W $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 31.

All of Sec. 30.

Township 46 North, Range 64 East, Mt. D. M.

E $\frac{1}{2}$, E $\frac{1}{2}$ W $\frac{1}{2}$, E $\frac{1}{2}$ W $\frac{1}{2}$ W $\frac{1}{2}$ Sec. 1.

W $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 1.

E $\frac{1}{2}$ and E $\frac{1}{2}$ of W $\frac{1}{2}$ Sec. 12.

NE $\frac{1}{4}$ Sec. 13.

E $\frac{1}{2}$ NW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 13.

E $\frac{1}{2}$ NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 13.

SW $\frac{1}{4}$ Sec. 13.

W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 24.

N $\frac{1}{2}$ SE $\frac{1}{4}$ and SW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 23.

E $\frac{1}{2}$ NE $\frac{1}{4}$ Sec. 23.

Township 46 North, Range 65 East, Mt. D. M.

W $\frac{1}{2}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, NW $\frac{1}{4}$, Sec. 6.

N $\frac{1}{2}$ SE $\frac{1}{4}$ Sec. 6.

NE $\frac{1}{4}$ Sec. 6.

W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 7.

W $\frac{1}{2}$ W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 7.

2. Each of the parties hereto is perpetually enjoined from using or diverting from the channel of the stream any of the waters of said Salmon River or Salmon Creek, or its tributaries, in excess of its several rights as the same are hereinbefore defined, and from diverting or using the water at such time or in such manner or in such amount as will infringe upon any right of the other party, as such right is hereinbefore defined.

3. IT IS FURTHER ORDERED AND DECREED that the plaintiffs install a suitable and efficient automatic measuring and registering device at their point of diversion, and that the defendant install uniform measuring devices at the several points where it diverts water from the channel of said Salmon River or Salmon Creek and of any of its tributaries; all such devices to be of such design as to automatically register the amount of water diverted. All such measuring devices and gauges shall at all times be subject to the inspection of either party, and no dam or other obstruction to the natural flow of the stream shall be maintained so as to divert water from the channel of the stream, except through ditches, canals or other works provided with such measuring devices, and each of the parties hereto is perpetually enjoined from diverting from the channel of the stream or its tributaries, any water through any ditch, conduit, or other device not provided with such measuring device.

4. IT IS FURTHER ORDERED AND DECREED That the Court retain jurisdiction to make all reasonable rules touching the manner of diverting, measuring and distributing the water, and the devices to be installed and used for such purposes where it may be impracticable to fully comply with the terms of the decree, and to direct that the parties keep accurate and detailed records of the amounts of water diverted, and to require reports to be filed from time to time of the amount so diverted, and generally to make such orders as may be found rea-

sonably necessary to give effect to the decree, and to appoint commissioners or water masters to make distribution in accordance with its terms, and to punish the parties hereto, their officers, agents and employes, and their grantees and successors in interest, for any violation of the provisions thereof.

Done in open Court this 23rd day of March, 1916.

(Signed) FRANK S. DIETRICH,
District Judge.

Endorsed: Filed March 24, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

PETITION FOR APPEAL AND ORDER
ALLOWING SAME.

To the Honorable Frank S. Dietrich, District Judge:

The above named defendant, Vineyard Land and Stock Company, feeling aggrieved by the decree rendered and entered in the above entitled cause on the 24th day of March, 1916, does hereby appeal from said decree to the Circuit Court of Appeals for the Ninth Judicial Circuit, for the reasons set forth in the Assignment of Errors filed herewith, and it prays that its appeal be allowed and that citation be issued as provided by law, and that a transcript of the record proceedings and documents upon which said decree was based, duly authenticated, be sent to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, under the rules of such Court in such cases made and provided.

And your petitioner further prays that the proper order relating to the required security to be required of it be made.

Dated this 20th day of Sept., 1916.

ANDREW HOWAT,

J. A. MARSHALL,

HERBERT R. MacMILLAN,

FRANK K. NEBEKER,

Residence: Salt Lake City, Utah.

C. B. HENDERSON,

Residence: Elko, Nevada.

EDWIN SNOW,

Residence: Boise City, Idaho.

C. A. BOYD,

Residence: Ogden, Utah.

Solicitors for Defendant.

Appeal allowed upon giving bond as required by law for the sum of Three Hundred dollars (\$300.00).

Dated Sept. 20th, 1916.

FRANK S. DIETRICH,

United States District Judge for the
District of Idaho.

Endorsed: Filed Sept. 20, 1916. W. D. McReynolds, Clerk.

(Title of Court and Cause.)

ASSIGNMENT OF ERRORS.

Now comes the defendant in the above entitled cause and files the following assignment of errors upon which it will rely upon its prosecution of the appeal in the above entitled cause, from the decree

made by this Honorable Court on the 24th day of March, A. D. 1916:

I.

The court erred in making and entering its decree herein awarding and decreeing to defendant as a prior right to the rights of the plaintiffs in and to the waters of Salmon River and its tributaries, only 12,500 acre feet of said waters, and in not finding and holding that defendant is entitled to the prior right to the use of 50,641.5 acre feet of the waters of said streams.

II.

The court erred in decreeing that the right of defendant to use 12,000 acre feet of the waters of said Salmon River and its tributaries for the irrigation of its lands by means of defendant's High Line, or Harrell, Canal, is subsequent and subordinate to plaintiffs' rights to use the waters of said streams. The lands of defendant referred to in this assignment are situate in Elko County, State of Nevada, and are particularly described as follows, to-wit:

Township 47 North, Range 64 East, M. D. M.

E $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 23.

SE $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 23.

NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 23.

S $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 24.

S $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 24.

NW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 24.

NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 24.

S $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 24.

SE $\frac{1}{4}$ of Section 24.

N $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 25.

SE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 25.

N $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 25.

SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 25.

NW $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 25.

S $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 25.

SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 25.

NW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 36.

S $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 36.

NW $\frac{1}{4}$ of Section 36.

S $\frac{1}{2}$ of Section 36.

Township 47 North, Range 65 East, M. D. M.

SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 19.

SW $\frac{1}{4}$ of Section 19.

SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 19.

SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 29.

N $\frac{1}{2}$ of NW $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 29.

All of Section 30.

NW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 31.

W $\frac{1}{2}$ of Section 31.

W $\frac{1}{2}$ of W $\frac{1}{2}$ of SE $\frac{1}{4}$, Section 31.

Township 46 North, Range 65 East, M. D. M.

N $\frac{1}{2}$ of Section 6.

N $\frac{1}{2}$ of S $\frac{1}{2}$, Section 6.

SW $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 6.

W $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 7.

W $\frac{1}{2}$ of W $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 7.

Township 46 North, Range 64 East, M. D. M.

E $\frac{1}{2}$ of Section 1.

N $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 1.

SE $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 1.

E $\frac{1}{2}$ of SW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 1.

E $\frac{1}{2}$ of Section 12.

E $\frac{1}{2}$ of W $\frac{1}{2}$, Section 12.

NE $\frac{1}{4}$ of Section 13.

NE $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 13.

E $\frac{1}{2}$ of NW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 13.

S $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 13.

N $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 13.

S $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 13.

W $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 24.

E $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 23.

N $\frac{1}{2}$ of SE $\frac{1}{4}$, Section 23.

SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 23.

III.

The court erred in decreeing absolutely to plaintiffs any of the waters of Salmon River and its tributaries in excess of the quantity, to-wit, about 45,000 acre feet, which has been used by plaintiffs for beneficial purposes, and in enjoining the defendant from using any of such excess waters prior to the actual application of the same to the beneficial uses for which said waters are claimed, and in making and entering any decree herein with respect to such excess, except to determine the amount thereof that can be diverted through plaintiffs' works and the priority of the same, and to set a time within which such amount of such excess shall, subject to the rights of the defendant, be applied by plaintiffs to the purposes for which the same is claimed.

IV.

The court erred in making and entering its decree

herein in quieting title in plaintiffs to any of the waters of Salmon River and its tributaries.

V.

The court erred in decreeing that the 12,500 acre feet of the waters of said Salmon River and its tributaries awarded to defendant as a prior right to the rights decreed to plaintiffs, can be used only upon such of the defendant's lands in the State of Nevada, and particularly described in the decree herein, as were reclaimed by defendant and its predecessors in interest prior to the year 1907.

VI.

The court erred in making and entering its decree herein enjoining the defendant from using any part of said 12,500 acre feet of the waters of said Salmon River and its tributaries so decreed to defendant as a prior right, upon the lands of defendant located under the High Line, or Harrell, Canal, and particularly described in Assignment numbered II.

VII.

The court erred in making and entering its decree herein enjoining the defendant from changing the points of diversion and places of use of the waters of said Salmon River and its tributaries, as authorized by law and particularly as authorized by the laws of the State of Nevada.

VIII.

The court erred in making and entering its decree herein enjoining the defendant from irrigating its

lands by means of dams placed in the natural channels of said Salmon River and its tributaries and in the sloughs and other channels leading therefrom, thereby flooding said lands without the use of artificial canals, ditches and conduits, and in enjoining the defendant from diverting any of the waters of said stream or its tributaries, except by means of ditches or other devices provided with automatic guages.

IX.

The court erred in making and entering its decree herein requiring the defendant to install in all of its ditches, canals and conduits, in the State of Nevada, automatic measuring devices for measuring all waters used by the defendant from said streams, in said state, and in decreeing that all such measuring devices and guages shall at all times be subject to the inspection of plaintiffs; and in decreeing that the plaintiffs should have the right to go upon the lands of the defendant in the State of Nevada for the purpose of inspecting the measuring devices installed by defendant in its said ditches, canals and conduits.

X.

The court erred in making and entering its decree herein awarding to and quieting title in plaintiffs to the right to use each season 235,000 acre feet of the waters of said Salmon River and its tributaries, and in awarding and decreeing to plaintiffs any quantity of said waters in excess of 45,000 acre feet, and in decreeing that any right of plaintiffs to the use of

said waters is prior to any right of the defendant thereto.

XI.

The court erred in making and entering its decree herein retaining jurisdiction in said cause for the purpose of making rules touching the manner of defendant's diversions, measurements, and distribution of the waters of said Salmon River and its tributaries in the State of Nevada; or for the purpose of directing defendant to keep records of the amounts of water of said streams diverted and used by it in the State of Nevada; or for the purpose of appointing water-masters or commissioners with authority to go upon the said premises of the defendant in the State of Nevada and to distribute to the defendant the waters of said streams to which it is entitled for the irrigation of its lands in said state; or for the purpose of making any order whatever touching the distribution, use, points of diversion or places of use of the waters of said streams by the defendant in connection with the irrigation of its lands in the State of Nevada.

XII.

The court erred in making and entering its decree herein in awarding to the plaintiffs any of the waters of the tributaries of Salmon River known as Jake's Creek, Dry Creek and Nall Creek, and in not finding and holding that defendant is entitled to the use of all of the waters of said streams.

XIII.

The court erred in decreeing that the defendant is not entitled to irrigate the following described lands belonging to defendant, in Elko County, State of Nevada, and in Twin Falls County, State of Idaho, and in refusing to award to defendant 7,438 acre feet of the waters of said Salmon River and its tributaries for the irrigation of said lands. Said lands have a total area of 1,653 acres, and are particularly described as follows, to-wit:

IN ELKO COUNTY, STATE OF NEVADA.

Under Bore's Nest Ditch (East Side) in Township Forty-Seven North, Range Sixty-Four East, M. D. M.

2 acres in $E\frac{1}{2}$ of $E\frac{1}{2}$ of $NE\frac{1}{4}$, Section 26.

20 acres in $E\frac{1}{2}$ of $E\frac{1}{2}$ of $SE\frac{1}{4}$, Section 26.

18 acres in $E\frac{1}{2}$ of $E\frac{1}{2}$ of $NE\frac{1}{4}$, Section 35.

8.80 acres in $E\frac{1}{2}$ of $E\frac{1}{2}$ of $SE\frac{1}{4}$, Section 35.

Under Grey Ditch (West Side), in Township Forty-Six North, Range Sixty-Four East, M. D. M.

3.60 acres in $NE\frac{1}{4}$ of $SW\frac{1}{4}$, Section 11.

Under Mitchell Slough, in Township Forty-Six North, Range Sixty-Four East, M. D. M.:

1.60 acres in $SW\frac{1}{4}$ of $NW\frac{1}{4}$, Section 13.

Under Harrell Ditch, south of San Jacinto Lane, in Township Forty-Six North, Range Sixty-Four East, M. D. M.:

5.60 acres in $NW\frac{1}{4}$ of $SW\frac{1}{4}$, Section 13.

46.00 acres in $S\frac{1}{2}$ of $SW\frac{1}{4}$, Section 13.

76.00 acres in $E\frac{1}{2}$ of $NE\frac{1}{4}$, Section 23.

40.00 acres in $SW\frac{1}{4}$ of $NE\frac{1}{4}$, Section 23.

74.00 acres in $W\frac{1}{2}$ of $SE\frac{1}{4}$, Section 23.

15.00 acres in $NE\frac{1}{4}$ of $SE\frac{1}{4}$, Section 23.

25.20 acres in $W\frac{1}{2}$ of $NW\frac{1}{4}$, Section 24.

10.00 acres in $NW\frac{1}{4}$ of $NE\frac{1}{4}$, Section 26.

15.00 acres in $E\frac{1}{2}$ of $NE\frac{1}{4}$ of $NW\frac{1}{4}$, Section 26.

2.00 acres in $SE\frac{1}{4}$ of $NW\frac{1}{4}$, Section 26.

15.50 acres in $E\frac{1}{2}$ of $SW\frac{1}{4}$ of $NW\frac{1}{4}$, Section 26.

Under Harrell Ditch and on Hellar Meadow, in Township Forty-Six North, Range Sixty-Four East, M. D. M.:

14.40 acres in $W\frac{1}{2}$ of $SW\frac{1}{4}$, Section 26.

20.00 acres in $E\frac{1}{2}$ of $NE\frac{1}{4}$ of $SE\frac{1}{4}$, Section 27.

6.00 acres in $E\frac{1}{2}$ of $SE\frac{1}{4}$ of $SE\frac{1}{4}$, Section 27.

6.00 acres in $SW\frac{1}{4}$ of $SW\frac{1}{4}$, Section 27.

Around Middle Stacks, in Township Forty-six North, Range Sixty-four East, M. D. M.:

8.00 acres in $E\frac{1}{2}$ of $SE\frac{1}{4}$ of $NE\frac{1}{4}$, Section 33.

8.40 acres in $N\frac{1}{2}$ of $NE\frac{1}{4}$ of $SE\frac{1}{4}$, Section 33.

6.00 acres in $NW\frac{1}{4}$ of $SE\frac{1}{4}$, Section 33.

1.20 acres in $SE\frac{1}{4}$ of $SW\frac{1}{4}$, Section 33.

Around Middle Stacks, in Township Forty-five North, Range Sixty-four East, M. D. M.:

2.40 acres in $E\frac{1}{2}$ of $E\frac{1}{2}$ of $NW\frac{1}{4}$, Section 3.

8.00 acres in $W\frac{1}{2}$ of $SW\frac{1}{4}$, Section 3.

1.00 acre in $W\frac{1}{2}$ of $SW\frac{1}{4}$ of $NE\frac{1}{4}$, Section 4.

17.20 acres in $E\frac{1}{2}$ of $SW\frac{1}{4}$, Section 9.

57.60 acres in $E\frac{1}{2}$ of $NW\frac{1}{4}$, Section 9.

34.00 acres in $W\frac{1}{2}$ of $E\frac{1}{2}$ of $SW\frac{1}{4}$, Section 9.

53.00 acres in $E\frac{1}{2}$ of $NE\frac{1}{4}$, Section 9.

13.60 acres in $E\frac{1}{2}$ of $SE\frac{1}{4}$, Section 9.

*At Roland Place, in Township Forty-five North,
Range Sixty-four East, M. D. M.:*

1.60 acres in NW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 16.

11.20 acres in E $\frac{1}{2}$ of E $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 16.

4.40 acres in SE $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 16.

*At Vineyard Ranch, in Township Forty-four North,
Range Sixty-three East, M. D. M.:*

48.80 acres in NW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 11.

16.40 acres in SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 11.

6.80 acres in SE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 10.

4.00 acres in NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 10.

10.50 acres in NW $\frac{1}{4}$ of NW $\frac{1}{4}$, Section 14.

10.00 acres in NW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 16.

4.00 acres in SE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 16.

*At Hubbard Ranch, in Township Forty-four North,
Range Sixty-three East, M. D. M.:*

20.00 acres in SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 34.

2.50 acres in NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 4.

16.50 acres in SW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 3.

8.00 acres in NE $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 3.

6.00 acres in SW $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 2.

8.00 acres in W $\frac{1}{2}$ of SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 11.

10.00 acres in E $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 11.

14.50 acres in NE $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 10.

5.00 acres in NW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 10.

2.00 acres in NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 14.

10.00 acres in E $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 23.

2.50 acres in NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 23.

*At Bridge Ranch, in Township Forty-seven North,
Range Sixty-five East, M. D. M.:*

9.00 acres in N $\frac{1}{2}$ of SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 18.

0.20 acres in SW $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 18.

23.00 acres in SW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 18.

14.00 acres in NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 18.

5.20 acres in NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 13.

8.00 acres in SE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 13.

17.20 acres in SE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 18.

31.60 acres in N $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 24.

29.60 acres in E $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 24.

*At Nall Ranch, in Township Forty-three North,
Range Sixty-four East, M. D. M.:*

6.50 acres in SW $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 4.

72.00 acres in SE $\frac{1}{4}$ of Section 4.

36.00 acres in S $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 4.

33.20 acres in W $\frac{1}{2}$ of SE $\frac{1}{4}$, Section 3.

*At Trout Creek Meadow, in Township Forty-five
North, Range Sixty-five East, M. D. M.:*

8.40 acres in S $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 1.

29.50 acres in NW $\frac{1}{4}$ of Section 26.

48.00 acres in SW $\frac{1}{4}$ of Section 26.

62.00 acres in NW $\frac{1}{4}$ of Section 35.

19.70 acres in W $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 35.

3.60 acres in SE $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 34.

7.60 acres in NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 35.

16.10 acres in W $\frac{1}{2}$ of SW $\frac{1}{4}$, Section 35.

Township 44 North, Range 65 East, M. D. M.:

4.00 acres in E $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 3.

*On Hot Creek, in Nevada, in Township Forty-seven
North, Range Sixty-seven East, M. D. M.:*

21.20 acres in S $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 6.

26.80 acres in S $\frac{1}{2}$ of NE $\frac{1}{4}$, Section 6.

34.40 acres in S $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 5.

19.20 acres in NE $\frac{1}{4}$ of SW $\frac{1}{4}$, Section 5.

26.80 acres in NW $\frac{1}{4}$ of SE $\frac{1}{4}$, Section 5.

52.60 acres in S $\frac{1}{2}$ of SE $\frac{1}{4}$, Section 5.

29.20 acres in NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Section 8.

59.00 acres in W $\frac{1}{2}$ of NW $\frac{1}{4}$, Section 9.

*On Hot Creek, in Idaho, in Township Sixteen South,
Range Seventeen East, B. M.:*

40.00 acres in Lots 2, 3 and 4, Section 25.

6.00 acres in Lot 1, Section 30.

XIV.

The court erred in making and entering its decree herein in refusing to award to the defendant the right to use all of the waters of the tributary of said Salmon River known as Trout Creek, after the flow of said tributary ceases each season to reach the natural channel of said Salmon River, and in enjoining the defendant from the use of any of the waters of said tributary upon lands formerly irrigated by the defendant from the waters thereof.

XV.

The court erred in refusing to permit defendant's witness, E. C. McClellan, to give his opinion as to the quantity of water per acre that would be consumed by evaporation and taken up by plant life as a result of the irrigation of defendant's lands by the flooding system, and in sustaining plaintiffs' objection to the question asked of the witness as to whether or not he knew the rate of evaporation of water at Winnemucca, Nevada, where the climatic conditions were similar to those on the Salmon River in

the section where defendant's lands are located. For a more complete statement of this assignment, the following proceedings at the trial are referred to:

MR. McCLELLAN:

I have made a study and become informed as to the quantity of water, or what you might say the duty of water is for irrigation of the character I have spoken of, that is the flooding of the lands, at these various ranches. The duty of water is very small, because there is a large quantity of water placed on the land and under those conditions the evaporation is very great. The growing plants there take up double or more as much water as if they were irrigated in a different way, and then there would be quite a large quantity of water either flow back into the streams on the surface or come back underneath. I have an opinion as to about the amount of water per acre that would be consumed either by evaporation or taken up by plant life in that form of irrigation. I have studied the matter of the duty of water for forty-five years in connection with the character of irrigation carried on in Nevada. I have observed it a very little in connection with the growing of alfalfa. My observations have been confined mainly to the method of irrigation used by the ranches in Nevada, in flooding the lands, putting the water onto it in the early spring and letting it run until haying time. I have had

experience in irrigating and supervising the irrigation of such lands. It has extended at different times since 1886, principally over the Sparks-Harrell range. I have observed from season to season the character of irrigation that was necessary to produce those crops, and have noted the effect of the flooding system upon the crops there and at other places as well. With the crops that are raised on that land, as the condition of the plants is there, they have got to be irrigated in that way to produce anything at all. The irrigation extends from on or before the first of April to between the first and tenth of July. My knowledge of evaporation is derived from reports of the United States Weather Service taken in the arid regions. There is a table that has been published of evaporations of a large number of different places in the arid regions by the United States Service in 1887 and 1888, I believe it was. Those tables can be secured from the Government, and they are also published. There is one place in Nevada, at Winnemucca, where the evaporation was observed, that I believe comes about as near the climatic conditions to Salmon River as any of the others, if not nearer.

MR. NEBEKER:

Q. Do you know what the evaporation is there?

A. That year, yes.

Q. At Winnemucca?

THE COURT:

Why is that important? I don't quite understand how evaporation enters into this question now, unless you are rebutting testimony brought out—

MR. NEBEKER:

No, I am not rebutting it. Our theory is this, that I don't know just what particular turn this case will take, but it may become necessary for us to show that we have established a right to the use of a large quantity of water which we would be entitled to, even although our system of irrigation in the past has not been the most economical, and now we propose to use a system of irrigation and bring a somewhat larger area of land under cultivation, which would result after all in less loss to anybody else lower down the stream than our former system of irrigation. That is the point.

THE COURT:

I don't quite understand yet how evaporation would have anything to do with it. You mean evaporation from the surface of the stream or evaporation from the soil saturated with water?

MR. NEBEKER:

Evaporation from the surface of the water that is used for irrigation under a past system, that is, a system by which the entire area was kept under water for some months of the year. That furnished a surface from which there was a very high evaporation. I say it may become

necessary for the Court to determine whether or not we should be permitted to use that same water, which would otherwise be lost under our old system of irrigation, apply it to a use where the evaporation would not be so great and by a method which would consume less water by evaporation.

MR. HAGA:

Does counsel claim that evaporation is a beneficial use?

MR. NEBEKER:

It is a necessary incident to irrigation to which we are entitled.

THE COURT:

That is true, that the loss by evaporation should always be considered in determining the amount of water which is required for the reasonable irrigation of any tract of land, that would be the evaporation of water in the distributing ditches and reservoirs, if there be a reservoir, and also the evaporation from the soil; but perhaps I can't anticipate what you are getting at here, the way the question is put. You ask for evaporation generally. Now, if this witness knows anything about the amount of evaporation there, it may or may not be material.

MR. NEBEKER:

I think it will appear to be material, in connection with the testimony that will be offered later on.

THE COURT:

Of course, in a case of this kind, the evidence takes such a wide range anyway that I don't care to open the door to immaterial testimony or incompetent testimony.

(Last question read.)

MR. HAGA: The question is objected to as irrelevant and immaterial, and as not a basis of determining the amount of water applied to a beneficial use.

THE COURT: This question is as to the evaporation at Winnemucca?

MR. NEBEKER: Where the conditions are the same.

THE COURT: The same as what?

MR. NEBEKER: The same as at Salmon River, where the irrigation takes place.

THE COURT: Perhaps I can get at this more quickly by asking the witness myself.

THE COURT:

Q. What do you mean by conditions at Winnemucca?

A. The general climatic conditions.

Q. Do you know anything about the conditions under which the experimentation was carried on?

A. Just as it is described in the pamphlet of the Government.

Q. Have you the pamphlet?

A. No, sir.

THE COURT: The objection will be sus-

tained to that particular question then, because it seems that all he knows about it is what he has read in this pamphlet, and he should have the pamphlet.

XVI.

The court erred in sustaining plaintiffs' objection to the question propounded to defendant's witness, E. C. McClellan, in which said witness was requested to state whether or not from his own knowledge of the particular character of irrigation that took place on the defendant's lands and of the kind of crops grown there, he would be able to state in miner's inches the quantity of water that would be required for the irrigation of those lands from the 1st of April until the 10th of July, each year, and if so, as to what that quantity would be. For a more complete statement of the proceedings upon which this assignment is based, the following proceedings, as shown by the Transcript, are referred to:

Q. Now, I will ask you, Mr. McClellan, to state whether or not from your knowledge of that particular kind of irrigation that took place in that valley and on these ranches, and of the kinds of crops that were grown there, if you are able to tell us in miners' inches the quantity of water that would be required upon those lands say from the 1st of April until the 10th of July?

MR. HAGA: That is objected to, if the Court please. Proper foundation has not been laid.

THE COURT: Sustained.

MR. McCLELLAN: I have had experience in the growing of crops of the kind that are grown on these ranches. In 1886 I had charge of and assisted in the irrigation of similar crops on the H. D. Ranch in Thousand Springs Valley. I did not make any measurements, but I observed the amount of water placed upon the lands and estimated as closely as I could. The water is customarily used continuously on the land from the 1st of April to the 10th of July, and as a rule is flooded during all of that time over the entire surface. I know the quantity of water per acre in miners' inches that would be required for that purpose.

Q. You may state what quantity is required?

MR. HAGA: I object to it.

THE COURT: You may interrogate him as to how he knows, if you desire.

CROSS-EXAMINATION: (By Mr. Haga.)

I made a rough measurement one time by taking the depth and width of water flowing through a head gate at the Bird's Nest ditch, estimated as closely as I could the velocity of the water at that point, so as to consider the amount of water flowing through that ditch. It was sometime during the month of May in 1897 I believe, but I am not positive. That is the only estimate I made of water flowing in the defendant's ditches on Salmon River by taking the actual size of the head-gate and the depth of the water flowing through it. A lot of the

water was diverted and used from the river by means of dams without ditches or head-gates. That might have been measured if a person would take the time and pains to do so, but I did not do that. I had no current meter for measuring the water at the time I made the estimate on the Bird's Nest Ditch. I made the estimate to see about the amount of water that was going out there, was all. I own a current meter and use it sometimes. I have used it on the Humboldt River. I have had more experience with weir measurements in Reno, in Ruby Valley, Independent Valley, near Tuscarora, in Mound Valley and on the South Fork of the Humboldt. I have never conducted any experiments to determine the amount of water that the grasses grown on these lands require for the best growth. I think I know the amount of moisture that is required in the ground for the most favorable production of the crops or grasses grown on defendant's lands. I have not conducted experiments for that purpose. I have seen experiments conducted in other places but not in this valley, on this kind of crop and to determine the amount of moisture that is present in or upon the soil for the production of that kind of crop. I did not compare the result for the varying quantities of water put on the soil. My experience was on one of the ranches of the company called the H. D. Ranch, in Thousand Springs Valley, in 1886 and I think in 1895.

I had charge of irrigation. The water was turned out in identically the same way as on these lands. That is not the extent of my experience in actual irrigation. I commenced irrigation on my father's ranch when I was 12 years old. On lands of this kind that was the practical extent of it. I have observed the same irrigation throughout Nevada as used in that way.

THE COURT: Objection sustained. I will say to you, gentlemen, that there was a time some years ago that we tried to adjudicate controversies of this kind with evidence perhaps no better than would be given by this witness on this point, because that was the best evidence we could get at that time, but that is no longer necessary. Irrigation has advanced to such a point, and we have had so much experience with it, that it is entirely practical to have scientific, practical evidence on a matter of this kind. The mere fact that a large amount of water has been used upon land is no evidence that a large amount is necessary.

RE-DIRECT EXAMINATION (Continuing):

Q. Do you know of any reason, Mr. McClellan, why, if it be a fact that it is necessary to keep water flowing over the surface of the ground for the production of such crops as you have spoken of along the Salmon River?

A. Yes sir.

Q. Why is that?

MR. HAGA: If the Court please. That is

objected to. No proper foundation has been laid.

THE COURT: Objection sustained. The witness has not testified that it was necessary, Mr. Nebeker. You asked him why it was necessary.

MR. NEBEKER: I asked him first if he knew any reason why, and I asked him what that reason was.

THE COURT: Yes, but that is getting at it indirectly, to the question whether or not it is necessary. If you were to ask him the question whether or not it is necessary I should have to sustain the objection on the ground that he is incompetent to answer that question.

XVII.

The court erred in limiting the purposes for which defendant's exhibits numbered 2, 3, 8 and 9 were receivable in evidence, and in ruling that said exhibits were admissable for the sole purpose of showing an affirmative act in the way of instituting water rights at the dates of said exhibits, respectively, in the same way as any other act, as the making of a survey, might be taken as evidence of an intention to appropriate water at that time.

Defendant's exhibit No. 2 contains the following:

(a) The original notice of location of the Harrell Ditch (or High Line Canal). It is executed and acknowledged by John Sparks, president of the Sparks-Harrell Company, on the 28th day of November, 1892, and was filed for

record in the office of the County Recorder of Elko County, Nevada, on the——day of November, 1892. It states the point of diversion, the length, width and depth of the proposed canal, and a general description of the lands (aggregating about 4,000 acres) to be irrigated. It claims 5,000 miners' inches of water from Salmon River. A plat is attached to the notice showing more particularly the location of the ditch, as well as of the lands to be irrigated.

(b) Water and ditch location notice of the "Upper Vineyard Ditch." The point of diversion, general course, and length of the ditch, together with the lands to be irrigated thereby (including lands that were irrigated from said ditch at the time of the trial) are specifically stated in the notice. Claim is made for 500 cubic feet per second of the waters of Salmon River for irrigation, domestic and other useful purposes. A map is attached to the notice showing the particular location of the ditch and lands to be irrigated therefrom. It was executed by John Sparks, president, and Andrew J. Harrell, secretary, of the Sparks-Harrell Company, and acknowledged on the 25th day of May, 1899, and filed for record in the office of the County Recorder of Elko County, Nevada, on the 26th day of May, 1899;

(c) Water and ditch location notice relating to the Harrell Ditch (or High Line canal). It was executed by John Sparks, president, and

Andrew J. Harrell, secretary, of The Sparks-Harrell Company, and acknowledged on the 9th day of June, 1899; it was filed for record in the office of the County Recorder of Elko County, Nevada, on the 12th day of June, 1899. It gives a particular description of the point of diversion, location, length and other dimensions of the proposed canal, as well as a description of that part of the canal already constructed; it states that it is made to describe all changes from the survey of November 5, 1892, and to give a more definite description of the lands covered and to be irrigated therefrom. The lands to be irrigated are specifically described (being the same lands as those under the canal as now constructed) and is accompanied by a map showing the location of the ditch and the lands to be irrigated therefrom. The line of the proposed canal is the same upon which the canal was afterwards constructed.

Defendant's Exhibit No. 3 is a water and ditch location notice executed by John Sparks, president, and Andrew J. Harrell, secretary, of The Sparks-Harrell Company, and acknowledged on the 30th day of October, 1893, and filed for record on the 14th day of December, 1893. It claims all of the waters of what is known as Hot Creek and Fall Creek, in township forty-seven north, range sixty-seven east, M. D. M., in Elko County, Nevada; it gives the points of diversion, locations and termini of two

ditches, which were thereafter constructed, and a particular description of the lands to be irrigated. The notice is accompanied by a map showing the location of the ditches and the lands to be irrigated therefrom.

Defendant's Exhibit No. 8 is a water and ditch location notice, executed by John Sparks, president, and Andrew J. Harrell, secretary, of The Sparks-Harrell Company, acknowledged on the 4th day of October, 1893, and filed for record on the 14th day of December, 1893. It claims eleven cubic feet per second of the waters of North, Middle and South Forks of Trout Creek, to be used for irrigation of lands specifically described in the notice. The points of diversion, courses, and termini of two proposed ditches are given, and a map is attached to the notice showing the location of the ditches and the lands to be irrigated therefrom.

Defendant's Exhibit No. 9 is a water and ditch location notice, executed by John Sparks, president, and Andrew J. Harrell, secretary, of The Sparks-Harrell Company, acknowledged on the 1st day of November, 1893, and filed for record on the 14th day of December, 1893. It claims twenty cubic feet per second of the waters of Shoshone Creek, flowing through township forty-seven north, ranges sixty-four and sixty-five east, M. D. M., in Elko County, Nevada; said water to be used for the irrigation of certain lands specifically described in the no-

tice. Two proposed ditches for the diversion and use of said water are specifically described, and a more particular description of the same appears on the map attached to the notice.

All the foregoing exhibits were duly recorded in the proper records of the County Recorder of Elko County, State of Nevada, and appear in the printed transcript of defendant's exhibits, to which reference is hereby made.

WHEREFORE the appellant prays that said decree be reversed and that such decree be entered as is meet and equitable.

ANDREW HOWAT,
JOHN A. MARSHALL,
H. R. MACMILLAN,
FRANK K. NEBEKER,

Residence: Salt Lake City, Utah.

EDWIN SNOW,

Residence: Boise City, Idaho.

C. B. HENDERSON,

Residence: Elko, Nevada.

C. A. BOYD,

Residence: Ogden, Utah.

Solicitors for Defendant and Appellant.

Endorsed: Filed Sept. 20, 1916. W. D. McReynolds, Clerk.

(Title of Court and Cause.)

STIPULATION.

IT IS STIPULATED that all of plaintiffs' exhibits, except those numbered one (1) to six (6), and

thirty-one (31), may be omitted from the printed transcript of the record on appeal, and that the originals of all other exhibits introduced by plaintiffs, as well as defendant's exhibits numbered one (1) to sixteen (16) inclusive, and a copy of the Herrington report, may be by the Clerk of this Court transmitted separately from the printed transcript to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, and that said exhibits so transmitted separately from the printed transcript may be considered by said Circuit Court of Appeals the same in all respects as if said exhibits were incorporated in said printed transcript.

It is further stipulated that if said Circuit Court of Appeals shall of its own motion determine that any part of the record not included in the printed transcript should have been so included for the information or convenience of the Court, or if either party shall hereafter desire any additional part of the record certified to said Court, or printed as part of the record, the same may be certified up to said Circuit Court of Appeals, and, if required, printed as a supplement to the record at the expense, in the first instance, of the appellant.

Dated this 20th day of Sept., 1916.

S. H. HAYS,
P. B. CARTER,
J. H. RICHARDS,
O. O. HAGA,

Solicitors for Plaintiffs.

ANDREW HOWAT,
J. A. MARSHALL,
HERBERT R. MACMILLAN,
FRANK K. NEBEKER,
EDWIN SNOW,
C. B. HENDERSON,
C. A. BOYD,

Solicitors for Defendants.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

PRAECIPE.

The Clerk of the above entitled Court is hereby directed to transcribe for the record on appeal herein by defendant Vineyard Land and Stock Company, the following pleadings, exhibits and documents:

Bill of complaint, amendment to bill of complaint, amended answer and counterclaim, answer to amended answer and counterclaim, proposed amendment to amended answer, statement of evidence of all witnesses, including a statement of the substance of plaintiffs' exhibits numbered 1, 2, 3, 4, 5, 6 and 31; defendant's exhibits numbered 2, 3, 8 and 9; the decision of the trial court, the decree made and entered in said cause, the petition for appeal and the order allowing the same, the assignment of errors, the stipulation between counsel for the respective parties as to the transmission of original exhibits, the prae-cipe to the clerk of said court, the order of the trial

court for the transmission of original exhibits, the bond on appeal, citation, the clerk's return to record, and clerk's certificate.

Said clerk is directed in preparing the printed transcript on appeal herein to exclude the formal and immaterial parts of all of said pleadings, exhibits and documents.

Said clerk is also requested to attach his certificate to each original exhibit transmitted to the appellate court.

Dated this 20th day of September, 1916.

ANDREW HOWAT,

J. A. MARSHALL,

H. R. MACMILLAN,

FRANK K. NEBEKER,

Residence: Salt Lake City, Utah.

C. B. HENDERSON,

Residence: Elko, Nevada.

EDWIN SNOW,

Residence: Boise City, Idaho.

C. A. BOYD,

Residence: Ogden, Utah.

Solicitors for Defendant.

Due service of the foregoing is hereby admitted, this 20th day of September, 1916.

S. H. HAYS,

P. B. CARTER,

J. H. RICHARDS,

O. O. HAGA,

Solicitors for Plaintiffs.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

ORDER FOR TRANSMISSION OF ORIGINAL
EXHIBITS.

It appearing to me to be necessary and proper that the original papers hereinafter mentioned should be inspected in the United States Circuit Court of Appeals for the Ninth Judicial Circuit, upon appeal herein:

It is hereby ordered that plaintiffs' original exhibits numbered seven (7) to thirty-three (33), inclusive, and the copy of the Herrington Report, referred to in the testimony herein, and defendant's original exhibits numbered one (1), four (4), five (5), six (6), seven (7), ten (10), eleven (11), twelve (12), thirteen (13), fourteen (14), fifteen (15) and sixteen (16), shall be certified by the Clerk of this Court and transmitted to the Clerk of the United States Circuit Court of Appeals for the Ninth Judicial Circuit, separately from the printed transcript herein, at the time that said printed transcript is transmitted.

Dated this 20th day of September, A. D. 1916.

FRANK S. DIETRICH,
United States District Judge for
the District of Idaho.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

BOND ON APPEAL.

KNOW ALL MEN BY THESE PRESENTS: That we, Vineyard Land and Stock Company, a corporation of Utah, as principal, and American Surety Company of New York, a corporation of the State of New York, as surety, are held and firmly bound unto Twin Falls Salmon River Land and Water Company, a corporation, and Salmon River Canal Company, Limited, a corporation, in the sum of Three Hundred and no-100 Dollars (\$300.00), to be paid to them and to their respective successors and assigns;

To which payment well and truly to be made we bind ourselves, and each of us, jointly and severally, and each of our successors and assigns, by these presents.

Sealed with our seals and dated this 18th day of September, A. D. 1916.

WHEREAS, the above named Vineyard Land and Stock Company is about to prosecute an appeal to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, to reverse the judgment of the United States District Court for the District of Idaho, Southern Division, in the above entitled cause;

NOW, THEREFORE, the condition of this obligation is such that if the above named Vineyard Land and Stock Company shall prosecute its said appeal to effect and answer all costs if it fails to make

good its plea, then this obligation shall be void; otherwise to remain in full force and effect.

VINEYARD LAND AND STOCK COMPANY,
By FRANK K. NEBEKER,

Attest: Its Attorney.

W. H. WATTIS, Secretary.

AMERICAN SURETY COMPANY
OF NEW YORK,

By W. E. McKELL,

Attest: Resident Vice President.

V. H. GALLOWAY,

Resident Assistant Secretary.

Countersigned: SHEPPARD & FALK,

By BRADLEY SHEPPARD, Agent,

Boise, Idaho.

(Statutory affidavit for corporate surety for Idaho.)

Approved: Dietrich, Judge. Sept. 20, 1916.

Filed Sept. 20, 1916. W. D. McReynolds, Clerk.

STATUTORY AFFIDAVIT FOR CORPORATE
SURETY—IDAHO.

State of Utah,

County of Salt Lake,—ss.

On the 18th day of September, 1916, personally appeared before me, a Notary Public in and for the County and State aforesaid, W. E. McKell, to me known to be a Resident Vice President of the AMERICAN SURETY COMPANY OF NEW YORK, who, being by me duly sworn, did depose and say: That he

resided in the City of Salt Lake City, State of Utah; that he is Resident Vice President of the AMERICAN SURETY COMPANY OF NEW YORK, the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Trustees of said corporation; and that he signed his name thereto by like order; that said corporation has complied with Chapter Eleven of the Idaho Revised Codes and all other laws of the State of Idaho relating to surety companies and has also complied with the Act of Congress approved August Thirteenth, A. D. 1894, entitled: "An Act relative to recognizances, stipulations, bonds and undertakings, and to allow certain corporations to be accepted as surety thereon," as amended March 23, 1910; and that the liabilities of said corporation do not exceed its asseets as ascertained in the manner provided by law. And the said W. E. McKell further said that he was acquainted with V. H. Galloway and knew him to be one of the Resident Assistant Secretaries of said corporation; that the signature of said V. H. Galloway subscribed to the said instrument is in the genuine handwriting of the said V. H. Galloway and was thereto subscribed by the like order of the said Board of Trustees, and in the presence of him, the said W. E. McKell, Resident Vice President. Affiant further says that the Insurance Commissioner of the State of Idaho, whose address is Boise, Idaho, has been ap-

pointed Attorney upon whom process for the State of Idaho may be served according to law.

W. E. McKELL.

Subscribed and sworn to before me this 18th day of September, 1916. CORA BEATTY,
(Seal) Notary Public.

In the District Court of the United States, for the District of Idaho, Southern Division.

TWIN FALLS SALMON RIVER LAND AND WATER COMPANY, a corporation, and SALMON RIVER CANAL COMPANY, LIMITED, a corporation, Plaintiffs,

vs.

VINEYARD LAND AND STOCK COMPANY, a corporation, Defendant.

CITATION ON APPEAL.

In Equity—No. 405.

The United States of America, to Twin Falls Salmon River Land and Water Company, a corporation, and Salmon River Canal Company, Limited, a corporation, Greeting:

YOU ARE HEREBY NOTIFIED that in a certain case in equity in the United States District Court of the District of Idaho, Southern Division, wherein Twin Falls Salmon River Land and Water Company, a corporation, and Salmon River Canal Company, Limited, a corporation, are plaintiffs, and Vineyard Land and Stock Company, a corporation, is defendant, an appeal has been allowed the defendant therein to the United States Circuit Court of Appeals for

the Ninth Judicial Circuit. You are hereby cited and admonished to be and appear in said United States Circuit Court of Appeals for the Ninth Judicial Circuit, at San Francisco, California, thirty (30) days after the date of this Citation, to show cause, if any there be, why the Order and Decree appealed from should not be corrected and speedy justice done the parties in that behalf.

WITNESS, The Honorable Frank S. Dietrich, Judge of the District Court of the United States, for the District of Idaho, Southern Division, this 20th day of September, A. D. 1916.

FRANK S. DIETRICH,
United States District Judge for
the District of Idaho.

Service admitted this 20th day of September, 1916.

S. H. HAYS,
P. B. CARTER,
J. H. RICHARDS,
O. O. HAGA,
Solicitors for Plaintiff.

(Original)

*In the District Court of the United States for the
District of Idaho, Southern Division.*

TWIN FALLS SALMON RIVER LAND AND WATER CO., a corporation, and SALMON RIVER CANAL CO., Ltd., a corporation,

Plaintiffs,

VS.

VINEYARD LAND AND STOCK CO., a corporation,
Defendant.

CITATION ON APPEAL.

In Equity—No. 405.

Filed September 20, 1916.

W. D. McREYNOLDS,
Clerk.

RETURN TO RECORD.

And thereupon it is ordered by the Court that the foregoing transcript of the record and proceedings in the cause aforesaid, together with all things thereunto relating, be transmitted to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, and the same is transmitted accordingly.

W. D. McREYNOLDS,
Clerk.

By PEARL E. ZANGER,
Deputy Clerk.

(Title of Court and Cause.)

CLERK'S CERTIFICATE.

I, W. D. McREYNOLDS, Clerk of the United States District Court for the District of Idaho, Southern Division, do hereby certify that the above and foregoing transcript of pages from one (1) to three hundred and seventy-six (376), inclusive, contain true and correct copies of the bill of complaint, amendment to bill of complaint, amended answer and counterclaim, answer to amended answer and counter-claim, proposed amendment to amended

answer, statement of evidence of all witnesses, including a statement of the substance of plaintiffs' exhibits numbered 1, 2, 3, 4, 5, 6 and 31; defendant's exhibits numbered 2, 3, 8 and 9; the decision of the trial court, the decree made and entered in said cause, the petition for appeal and the order allowing the same, the assignment of errors, the stipulation between counsel for the respective parties as to the transmission of original exhibits, the precipe to the Clerk of said Court, the order of the trial court for the transmission of original exhibits, the bond on appeal, the Clerk's return to record and Clerk's certificate, in the above entitled cause, which together constitute the transcript of record herein upon appeal to the United States Circuit Court of Appeals for the Ninth Judicial Circuit. I further certify that I have annexed to said transcript of the record the original Citation issued in said cause. I further certify that the costs of the record herein amount to the sum of Four Hundred and Thirty-seven Dollars (\$437.00), and that the same have been paid by appellant.

WITNESS MY HAND and the seal of said Court affixed, at Boise, Idaho, this 13th day of November, 1916.

W. D. McREYNOLDS,

Clerk.

By PEARL E. ZANGER,

Deputy Clerk.

No. 2885.

United States
Circuit Court of Appeals
Ninth Circuit.

VINEYARD LAND & STOCK COMPANY, A CORPORATION,

Appellant,

vs.

TWIN FALLS SALMON RIVER LAND AND WATER COM-
PANY, A CORPORATION; AND SALMON RIVER CANAL COM-
PANY, LIMITED, A CORPORATION,

Appellees.

Brief for Appellant.

FRANK K. NEBEKER,

C. A. BOYD,

EDWIN SNOW,

C. B. HENDERSON,

Solicitors for Appellant.

HOWAT, MARSHALL,

MACMILLAN & NEBEKER,

Of Counsel.

Filed

JAN 27 1917

F. D. Monckton,
Clerk.

No. 2885.

**United States
Circuit Court of Appeals**

VINEYARD LAND & STOCK COMPANY, A CORPORATION,
Appellant,
vs.
TWIN FALLS SALMON RIVER LAND AND WATER COM-
PANY, A CORPORATION; AND SALMON RIVER CANAL COM-
PANY, LIMITED, A CORPORATION,
Appellees.

Brief for Appellant.

(Figures in parentheses refer to pages of printed transcript.)

STATEMENT OF THE CASE.

This controversy involves conflicting claims of rights to the use of the waters of Salmon River, an interstate stream whose sources are mainly in the State of Nevada, and whose course extends through a portion of the northern part of that state into and through a portion of the State of Idaho, discharging its waters into the Snake River in that state. The suit was brought by the Twin Falls Salmon River Land and Water Company and Salmon River Canal Company, Limited, appellees herein, against the

Vineyard Land and Stock Company, appellant herein, in the United States District Court for the District of Idaho, for the purpose of quieting in plaintiffs the title to the right to use all of the waters of said stream upon lands under their irrigation system in Twin Falls County, Idaho, and to enjoin defendant from the use of any of the waters of said stream upon its lands in Elko County, Nevada. The appellee, Twin Falls Salmon River Land & Water Company, is a corporation organized and existing under the laws of Delaware, and the appellee, Salmon River Canal Company, Limited, is a corporation organized and existing under the laws of the State of Idaho. The appellant is a Utah corporation, engaged in the stock business in the State of Nevada and in connection with that business owns and operates a number of large ranching properties in Elko County, Nevada. Process was served upon the resident agent in Idaho of the defendant. No question is raised as to the jurisdiction of the person of the defendant.

For convenience we shall designate the parties plaintiffs and defendant as they were in the court below.

In their bill (7-34) plaintiffs allege in substance that they are the owners of an extensive irrigation system, including a reservoir with a capacity of approximately 180,000 acre feet, in Twin Falls County, Idaho; that said system was constructed for the purpose of diverting from the channel of Salmon River waters for the irrigation of something like

127,000 acres of land; that their water rights are based upon three permits obtained from the State Engineer of the State of Idaho, by virtue of which they claim to be entitled to the right to use all of the waters of said stream. The particular permit which is relied upon by plaintiffs as giving them rights prior to any of the rights claimed by the defendant, is for 1,500 second feet, and is dated December 29, 1906. Plaintiffs further state that they have completed their system and at the time of the trial, according to the evidence, there were in cultivation and under irrigation under their system approximately 30,000 acres of land.

Plaintiffs also allege that the defendant had commenced and was engaged in constructing canals and ditches in Elko County, Nevada, for the purpose of appropriating, diverting and using the waters of Salmon River and its tributaries, and that the defendant threatens to, and will, unless prevented by the order and decree of court, divert and use said waters and thus prevent the same from reaching plaintiffs' irrigation works; that the plaintiffs were at the time of commencing the action in the use and enjoyment of said waters and were using the entire flow of said stream for the irrigation of the lands under their system. They prayed that the defendant be required to set forth the nature of its demands and claims with respect to said waters; that the right, title and interest of plaintiffs in and to the use of the same be adjudged and decreed to be prior and superior to the rights of the defendant, and that the plaintiffs' said rights be quieted; that the defendant,

its agents, servants, and successors in interest be forever enjoined and restrained from diverting or using any of the waters of said stream.

The defendant filed its answer and counter-claim (34), and besides denying, for lack of knowledge, numerous of the allegations of the bill, specifically denied the priority of any of the rights asserted by plaintiffs in and to the waters of said stream as against the rights of the defendant thereto. In the counter-claim of the defendant (43), it is alleged, among other things, that the defendant is the owner of about 25,000 acres of land, all arid in character, and situated along the course of and within the water sheds of the Salmon River and its tributaries, in Elko County, Nevada, with a small portion along the tributaries of said stream in the State of Idaho; that the statutes and laws of the State of Nevada as they existed at the time of and prior to the appropriations of certain of the waters of said stream by the plaintiffs, provided that all of the natural water courses and natural lakes, and the waters thereof, which are not held in private ownership, belong to the State of Nevada and are subject to appropriation for beneficial uses; that approximately 18,000 acres of the defendant's lands are susceptible of cultivation and irrigation and capable of producing crops of wild and tame grasses; that of this acreage about 13,500 acres are located immediately along and upon said stream and its tributaries in certain designated townships; that since a date long prior to the alleged appropriations of the plaintiffs the defend-

ant and its predecessors in interest had, during the irrigation season of each and every year, appropriated, diverted and used, by means of canals and ditches and by flooding and sub-irrigation, large quantities of the waters of said stream and its tributaries upon said lands, and during the low water season of each and every year had used practically all of said waters for the irrigation thereof. Defendant also alleged that in addition to the 13,500 acres already mentioned, it was the owner of about 4,500 acres of tillable lands located on a somewhat higher elevation than its other irrigated lands and that prior to the date of plaintiffs' appropriations, to-wit, in the years 1892 and 1897, it appropriated 5,000 miner's inches and 200 cubic feet per second, respectively, of the waters of said stream, for the irrigation of said lands; that the predecessors in interest of the defendant, long prior to the appropriations of the plaintiffs, had appropriated, diverted and used all of the waters of said stream necessary for the irrigation of said lands; that notwithstanding the use of said waters by defendant a large portion of the same naturally returned to the channel of said river and flowed thence to the reservoir of the plaintiffs. Defendant also alleged, on information and belief, that the plaintiffs failed to conserve or utilize all of the waters flowing down to the reservoir and on the contrary permitted large volumes to escape therefrom and to waste during all seasons of the year. The defendant prayed that the plaintiffs take nothing by virtue of their bill; also that defendant's rights in

and to the waters of said streams be quieted, and for incidental relief by way of injunction.

Upon the issues so joined the cause was tried to the court and culminated in the decree from which this appeal is taken.

The Court decreed (322-328) that, subject to the rights of defendant as hereinafter stated, plaintiffs had the right to use from the waters of said stream and its tributaries under and by virtue of the three permits issued to plaintiffs by the State Engineer of the State of Idaho, 3,000 cubic feet per second, with the limitation that the maximum aggregate diversion by plaintiffs for any one irrigation season should not exceed 235,000 acre feet; that the said waters were to be used only upon the lands embraced in what is known as the Salmon River Carey Act project; that the defendant was entitled to use annually 12,500 acre feet of said waters, representing and comprising all of its appropriations prior to the year 1907, and prior to the initiation of any rights by plaintiffs. The decree also provides:

1. That said waters should be used by the defendant only upon the lands described in the decree (329-335) and only upon such portions thereof as were reclaimed by the defendant or its predecessors in interest prior to the year 1907.

2. That said waters should be diverted to and upon said lands from the channels of said streams only by means of ditches, canals, or other conduits provided with suitable measuring devices for measuring the amount of water diverted from the channels of said streams.

3. That subject to the plaintiffs' rights, the defendant should be entitled to divert annually and use an additional 12,000 acre feet of the waters of said streams, to date from May 1st, 1911, with the further limitation that water embraced in this right should be diverted from the streams by means of what is known as the High Line or Harrell canal, whose location is particularly described (336) and be used only upon certain lands also specifically described in the decree. (336-37.) At this point it might be well to remark that this right is of no importance whatever to the defendant because there is not sufficient water to satisfy more than a small fractional part of the rights nominally decreed to plaintiffs and made superior to this right of the defendant.

4. Perpetually enjoins the parties from diverting or using any of the said waters in excess of the rights as defined in the decree, and from diverting or using said waters at such time or in such manner as to infringe upon any decreed right of the other party.

5. The decree also provides that the defendant shall install uniform measuring devices at the several points where it diverts water from the channels of said stream and its tributaries in the State of Nevada; that such devices be of such design as to automatically register the amount of water diverted; that such measuring devices and gauges should at all times be subject to the inspection of plaintiffs; that no dam or other obstruction to the natural flow of the streams should be maintained by the defend-

ant so as to divert water from the channels of the streams, except through ditches, canals or other works provided with such measuring devices; that no water should be diverted from said streams by the defendant through any ditch, conduit or other device not provided with measuring apparatus.

6. The Court also decreed that it would retain jurisdiction to make all reasonable rules touching the manner of diverting, measuring and distributing the waters and the devices to be installed for such purpose; also for the purpose of directing that the parties keep accurate and detailed records of the amounts of water diverted and to require reports thereof to be filed from time to time, and for the purpose of appointing commissioners or water masters to make distribution in accordance with the terms of the decree, and to punish the parties, their officers, agents, employes, and their grantees and successors in interest, for any violation of the decree.

General Statement of the Questions Involved in this Appeal.

The questions involved in this appeal are presented in detail by the Assignments of Errors, hereinafter set forth, but in more simple and direct form may be summarized as follows:

1. The trial court was in error in finding that the defendant was entitled to the right to use only 12,500 acre feet per annum of the waters in controversy; that on the contrary the Court should have found that the defendant had a vested right, prior to any right of plaintiffs, to use for irrigation purposes at least 50,641.5 acre feet per annum of said

waters; that in determining the quantity of water to which the defendant was entitled, the Court erroneously excluded large areas of land that had been irrigated by the predecessors in interest of the defendant long prior to the initiation of any water rights on the part of plaintiffs and particularly excluded all of the lands belonging to the defendant, amounting to about 4,500 acres, lying under and susceptible of irrigation from the High Line canal; that the Court also erroneously found and determined the duty of water for defendant's lands to be much higher than the facts and evidence introduced in the case would warrant.

2. The Court awarded to the plaintiffs the right to use of the waters in question a quantity greatly in excess of that which the evidence showed the plaintiffs had applied to beneficial uses and purposes, and recognized the right of plaintiffs to irrigate a much larger area than the evidence justified.

3. The Court erroneously attempts by its decree to exercise jurisdiction over defendant's property and property rights in the State of Nevada, beyond the territorial jurisdiction of the court, and erroneously attempts to regulate and control the defendant's management, use, occupation and control of its property and property rights in the State of Nevada, and attempts to compel defendant, with respect to its said property, to forego the exercise of rights that are expressly conferred upon it by the laws of the State of Nevada.

4. The trial Court erroneously found and de-

cided that defendant's right to the use of waters for the irrigation of lands lying under, and susceptible of irrigation from, its High Line Canal, is subsequent and subject to the rights decreed to plaintiffs; that in this connection the Court erred in refusing to give proper legal effect to certain notices of location and appropriation relating to said High Line Canal and offered in evidence, but received and considered by the Court under limitations and restrictions wholly inconsistent with the true legal effect of such notices.

5. Question is also raised with respect to the refusal of the Court to receive and consider certain material testimony offered by the appellant.

Specification of the Errors Relied Upon and in Which the Decree is Alleged to be Erroneous.

The assignments of errors relied upon and in which the decree is alleged to be erroneous, are as follows:

I.

“The Court erred in making and entering its decree herein awarding and decreeing to defendant as a prior right to the rights of the plaintiffs in and to the waters of Salmon River and its tributaries, only 12,500 acre feet of said waters, and in not finding and holding that defendant is entitled to the prior right to the use of 50,641.5 acre feet of the waters of said streams. (341.)

II.

“The Court erred in decreeing that the right of defendant to use 12,000 acre feet of the waters

of said Salmon River and its tributaries for the irrigation of its lands by means of defendant's High Line, or Harrell, Canal, is subsequent and subordinate to plaintiffs' rights to use the waters of said streams. The lands of defendant referred to in this assignment are situate in Elko County, State of Nevada, and are particularly described as follows, to-wit: (Here follows a specific description of the lands mentioned in this assignment, the area of which is approximately 5300 acres.) (341-343.)

III.

“The Court erred in decreeing absolutely to plaintiffs any of the waters of Salmon River and its tributaries in excess of the quantity, to-wit, about 45,000 acre feet, which has been used by plaintiffs for beneficial purposes, and in enjoining the defendant from using any of such excess waters prior to the actual application of the same to the beneficial uses for which said waters are claimed, and in making and entering any decree herein with respect to such excess, except to determine the amount thereof that can be diverted through plaintiffs' works and the priority of the same, and to set a time within which such amount of such excess shall, subject to the rights of the defendant, be applied by plaintiffs to the purposes for which the same is claimed. (343.)

IV.

“The Court erred in making and entering its

decree herein in quieting title in plaintiffs to any of the waters of Salmon River and its tributaries. (343-344.)

V.

“The Court erred in decreeing that the 12,500 acre feet of the waters of said Salmon River and its tributaries awarded to defendant as a prior right to the rights decreed to plaintiffs, can be used only upon such of the defendant’s lands in the State of Nevada, and particularly described in the decree herein, as were re-claimed by defendant and its predecessors in interest prior to the year 1907. (344.)

VI.

“The Court erred in making and entering its decree herein enjoining the defendant from using any part of said 12,500 acre feet of the waters of said Salmon River and its tributaries so decreed to defendant as a prior right, upon the lands of defendant located under the High Line, or Harrell, Canal, and particularly described in Assignment numbered II. (344.)

VII.

“The Court erred in making and entering its decree herein enjoining the defendant from changing the points of diversion and places of use of the waters of said Salmon River and its tributaries, as authorized by law and particularly as authorized by the laws of the State of Nevada. (344.)

VIII.

“The Court erred in making and entering its decree herein enjoining the defendant from irrigating its lands by means of dams placed in the natural channels of said Salmon River and its tributaries and in the sloughs and other channels leading therefrom, thereby flooding said lands without the use of artificial canals, ditches and conduits, and in enjoining the defendant from diverting any of the waters of said stream or its tributaries, except by means of ditches or other devices provided with automatic guages. (344-345.)

IX.

“The Court erred in making and entering its decree herein requiring the defendant to install in all of its ditches, canals and conduits, in the State of Nevada, automatic measuring devices for measuring all waters used by the defendant from said streams, in said state, and in decreeing that all such measuring devices and guages shall at all times be subject to the inspection of plaintiffs; and in decreeing that the plaintiffs should have the right to go upon the lands of the defendant in the State of Nevada for the purpose of inspecting the measuring devices installed by defendant in its said ditches, canals and conduits. (345.)

X.

“The Court erred in making and entering its decree herein awarding to and quieting title in

plaintiffs to the right to use each season 235,000 acre feet of the waters of said Salmon River and its tributaries, and in awarding and decreeing to plaintiffs any quantity of said waters in excess of 45,000 acre feet, and in decreeing that any right of plaintiffs to the use of said waters is prior to any right of the defendant thereto. (345-346.)

XI.

“The Court erred in making and entering its decree herein retaining jurisdiction in said cause for the purpose of making rules touching the manner of defendant’s diversions, measurements, and distribution of the waters of said Salmon River and its tributaries in the State of Nevada; or for the purpose of directing defendant to keep records of the amounts of water of said streams diverted and used by it in the State of Nevada; or for the purpose of appointing water-masters or commissioners with authority to go upon the said premises of the defendant in the State of Nevada and to distribute to the defendant the waters of said streams to which it is entitled for the irrigation of its lands in said state; or for the purpose of making any order whatever touching the distribution, use, points of diversion or places of use of the waters of said streams by the defendant in connection with the irrigation of its lands in the State of Nevada. (346.)

XII.

“The Court erred in making and entering its decree herein in awarding to the plaintiffs any of the waters of the tributaries of Salmon River known as Jake’s Creek, Dry Creek and Nall Creek, and in not finding and holding that defendant is entitled to the use of all of the waters of said streams. (346.)

XIII.

“The Court erred in decreeing that the defendant is not entitled to irrigate the following described lands belonging to defendant, in Elko County, State of Nevada, and in Twin Falls County, State of Idaho, and in refusing to award to defendant 7,438 acre feet of the waters of said Salmon River and its tributaries for the irrigation of said lands. Said lands have a total area of 1,653 acres, and are particularly described as follows, to-wit:

(Here follows a specific description of the lands mentioned in this assignment.) (347-351.)

XIV.

“The Court erred in making and entering its decree herein in refusing to award to the defendant the right to use all of the waters of the tributary of said Salmon River known as Trout Creek, after the flow of said tributary ceases each season to reach the natural channel of said Salmon River, and in enjoining the defendant from the use of any of the waters of said tributary upon lands formerly

irrigated by the defendant from the waters thereof." (351.)

BRIEF OF THE ARGUMENT.

I.

The Court erred in awarding to the defendant, as a prior right, only 12,500 acre feet of the waters in question, instead of finding and deciding that the defendant is entitled to the right to use, as a prior right, 50,641.5/ acre feet of said waters.

This proposition involves and includes the first, twelfth, thirteenth and fourteenth assignments of error. The decree does not specifically find or decide what particular lands the defendant is entitled to irrigate with the waters to which defendant is awarded a prior right. However, lands aggregating approximately 11,660 acres are specifically mentioned in the decree as being the lands that include those upon which the waters awarded to defendant as a prior right were used prior to 1907. We think the evidence quite conclusively shows that the defendant had under cultivation and irrigation, prior to 1907, not less than 8,506.4 acres of the lands described under paragraph "b" of the decree (329-335) and that prior to said date it also had under cultivation and irrigation the lands, aggregating 1,653 acres, described in the thirteenth assignment of error. (347-351.) In addition to these lands the defendant also contends that it was entitled to a prior right to sufficient water to irrigate approximately 4,500 acres of lands lying under, and susceptible of irrigation from, its High Line Canal. The evidence introduced by the

defendant with respect to the irrigation of its lands consists of the testimony of certain witnesses, supplemented by carefully prepared maps which were introduced as exhibits in the case, which maps, on account of their large size, could not be incorporated in the printed transcript and for that reason have been, pursuant to order of court, transmitted to and deposited with the Clerk of this Court. In considering the question of acreage of irrigated lands, therefore, it will be necessary for the Court to refer to these exhibits in connection with the testimony appearing in the transcript. It will be noted that the defendant's lands are, in the main, located upon and along Salmon River and its tributaries in the northern part of the State of Nevada and up-stream from the point where Salmon River crosses the Nevada-Idaho state line. Plaintiffs' dam is approximately fifteen miles below the State line. Defendant's properties consist of a number of ranches with local names, and also several unnamed fields and pastures on the head-waters of some of the tributaries. The Hubbard ranch is the one highest up the stream and is located on the tributary known as Jake's creek. The next ranch below this is the Vineyard ranch. It is located near the point where Jake's creek empties into the main stream. These two ranches are shown on defendant's Exhibit No. 11. The Vineyard ranch is also shown on defendant's Exhibit No. 4. The San Jacinto is the largest of the ranches. It extends along the stream below the Vineyard ranch for a distance of about twelve miles and is shown on

defendant's Exhibit No. 12. The Bridge ranch is shown on defendant's Exhibit No. 13 and is located on Shoshone creek, a short distance above where that tributary flows into Salmon River, near the Nevada-Idaho state line. The unnamed irrigated pastures and fields are shown on the following exhibits: Defendant's Exhibit No. 7, a plat of the irrigated lands on Trout Creek; No. 14, a plat of the Nall Creek fields and No. 15, a plat of the irrigated lands in Shoshone basin, on Jake's Creek and on Hot Creek. These streams are all tributaries of Salmon River.

It is conceded that plaintiffs' rights were initiated when their first application for appropriation of water was filed with the State Engineer of Idaho. This was on the 29th day of December, 1906. It must also be conceded that the defendant is entitled to a priority for all water rights established or initiated by it or its predecessors in interest prior to that date. On the trial of the case the defendant established the extent of its appropriations prior to the year 1907. In doing this it was confronted with many difficulties. The plaintiffs, in their bill, claimed all of the waters of Salmon River and its tributaries; whereas, in fairness and justice, they should have conceded the seniority of defendant's rights in so far at least as those rights were not disputable. It was very difficult indeed for the defendant to locate the whereabouts and procure the attendance of the witnesses who knew the facts concerning the irrigation of its lands. The defendant purchased the property in the fall of 1908. Prior to that time it had been owned and operated by different persons and companies ex-

tending over a period of from thirty to thirty-five years. The methods of irrigation had been of the crude character generally employed on western ranches. The work was done by ranch hands, some of whom had died; others were scattered throughout different parts of the United States. The former owners of the property, as the record shows, were deceased. The defendant did, nevertheless, procure the attendance of nearly every living witness who was acquainted with the irrigation on these various ranches and their testimony stands practically uncontradicted. The only evidence that there is in the record that can be said to be in conflict with the testimony of these witnesses is the testimony of two of plaintiffs' witnesses, Mr. Stocking (96), and Mr. Darlington (64). These two witnesses made cursory investigations a short time before this suit was commenced, for the purpose of testifying as to the acreage under irrigation, but their opportunities for observation were so meager and the conclusions reached by them as to the irrigated areas so unsatisfactory, that the Court must have disregarded their testimony; at any rate there is no finding of the Court that appears to rest to any extent whatever on the testimony of these witnesses.

Mr. E. C. McClellan (100) was the first witness called by the defendant to testify concerning the irrigation of its lands during the period from 1880 to 1904. He is an engineer of long experience and was intimately acquainted with that section of the country, having selected and surveyed the lands in ques-

tion for the defendant's predecessors and also having laid out practically all of the ditches thereon for them. As shown by his testimony, he was possessed of a rare faculty for accurate observation and had a most retentive memory. He had kept a record of his several surveys and on the trial was able to substantiate his statements from entries in field books made on the ground at the time of making the surveys. It appears that he was not upon these properties to speak of after 1904. He testified that in 1889, for the purpose of ascertaining the particular lands that were then being irrigated, he made a survey of the Vineyard ranch and of the valley between the Bird's Nest and the Bore's Nest, known as the San Jacinto ranch. From his notes of these surveys he produced defendant's Exhibit No. 4, being a map of the lands under irrigation on the Vineyard ranch in 1889 and prior thereto. In the same way he produced defendant's Exhibit No. 5, being a plat of that part of defendant's property located between the Bird's Nest and the Bore's Nest, a distance of about twelve and a half miles, and now known as the San Jacinto ranch. (104.) He gave minute descriptions of the various ditches that existed upon the lands in those days. These ditches appear on the exhibits and the irrigated areas are shown by the shaded portions of the exhibits. For instance, on Exhibit No. 4, as explained by the witness, the shaded portion lying south of what is labelled "Harrell Ditch" includes the area that was under irrigation on the Vineyard ranch. (103.) This area embraced 928.8 acres. (104.) The plaintiffs contended that only a portion

of that area was under irrigation until the upper Vineyard or Tunnel ditch, was constructed, some time subsequent to 1907, but it was shown that this ditch covered only about 100 acres more land than was irrigated by the ditches that existed prior to its construction, and the Court evidently found in favor of the defendant on this issue, because it included in the decree all of the lands on the Vineyard ranch claimed by the defendant to have been irrigated prior to 1907. We take it for granted, therefore, that appellees will concede that the appellant is entitled to a prior right to the use of sufficient water to irrigate 814.4 acres on the Vineyard ranch.

Passing to a consideration of the evidence concerning the San Jacinto ranch, it will be seen, as already stated, that Mr. McClellan surveyed the irrigated lands on this ranch in the same year (1889). From his notes he produced defendant's Exhibit No. 5, and located thereon, in dark colors, the lands that were irrigated prior to 1889, as well as all ditches that up to that time had been constructed for irrigation purposes. According to his testimony the irrigated area prior to 1889 on that ranch comprised 4,178.4 acres. (105.) It will be seen from Exhibit No. 5, as explained by the testimony, that these lands lie along the channel of the stream, at but a slight elevation above it, and extend to a distance on an average of about half a mile to a mile on each side thereof. The valley is typical of the mountain valleys of that section of the country. These lands on either side of the main channel were covered with natural meadows and pastures and are intersected by

sloughs and channels formed by the natural action of the water during the season of high water. Mr. McClellan explained the general method of irrigating these lands in those days. It was the usual method of irrigating natural meadows and pastures under the conditions described. No attempt was made to create a scientific irrigation system; diversions were made from the sloughs and natural channels at convenient places and the water was caused to spread out over the intervening lands. For the higher lands along the outer margin of the basin ditches were constructed, and thus the entire area of these bottom lands was irrigated and caused to produce crops of natural hay, some of which was harvested and portions of which were used as pasturage for the numerous cattle that were kept on these and adjacent lands by the then owners of these ranches. The testimony on this subject is tersely, but comprehensively, stated in the record. (102-108.) The Court in its decree excluded numerous of the irrigated tracts on the San Jacinto ranch. We are unable to explain why this was done, unless it was by inadvertence or mistake. The testimony as to the irrigation of that part which was excluded was of the same identical character as that with reference to the part that was included in the Court's decree. These excluded lands at San Jacinto are specifically described, and the areas of the different tracts stated, in the thirteenth assignment of error. (347-48-49.) The total area of those lands on the San Jacinto ranch alone, is 652.30 acres. The remainder of the irrigated lands that were excluded, going to make up the 1,653

acres mentioned in the thirteenth assignment, is located at other places, as will be explained later on in this brief. It is extremely important to the appellant to have the decree modified so as to include the irrigated lands excluded from the decree, because in addition to the property value involved it is very difficult if not impossible in many instances to irrigate the lands included in the decree without irrigating the excluded lands also.

After the year 1889 and between that date and the year 1904, the irrigated area on the San Jacinto ranch was increased to the extent of about 1,000 acres. (221-222.) Activities along the line of additional ditch construction seem to have been greatly stimulated by the hard winter of 1889-1890, when the then owners of these ranches suffered very heavy losses of cattle by starvation. Mr. McClellan was employed by the Sparks-Harrell Company, the then owner, to lay out ditches for the purpose of bringing additional lands under irrigation, and also for the purpose of irrigating more conveniently and thoroughly the lands that were already being irrigated. He commenced this work in 1893 and continued from year to year until sometime in 1904. (102.) He made careful notes of the ditches that were laid out by him and afterwards constructed, as well as of the additional lands brought under irrigation, and from these notes, as well as from independent recollection, he produced defendant's Exhibit No. 6. It will very greatly extend the length of this brief, without serving any very useful purpose, to here state Mr. Mc-

Clellan's testimony concerning this additional ditch construction. Suffice to say that he gave a detailed description of each one of the ditches, including the point of diversion, the approximate size, the course and length of each ditch. Inasmuch as these ditches were in existence at the time of the trial, there was no room for controversy concerning them. Should the Court desire at this point, however, to refer to this testimony it will be found at pages 109 to 117 of the transcript. By the year 1904, therefore, there was under irrigation on the San Jacinto ranch approximately 5198.8 acres. This additional 1,000 acres is shown in detail on defendant's Exhibit No. 16, and also on a map made by Mr. McClellan and introduced as plaintiff's Exhibit No. 32. By means of ditches constructed prior to 1904, supplemented by the dams placed in the channel of the river and in sloughs extending therefrom, all of the lands lying between the ditches and the channel of the stream from the Bird's Nest to the Bore's Nest were irrigated. Mr. McClellan also made ditch locations on the Bridge ranch and in the various fields located along the tributaries of Salmon River, but was not able to plat the irrigated lands at these places because of not having surveyed the same with sufficient accuracy.

The defendant in 1914 employed a force of engineers for a period of about eight months, who during that period surveyed and platted all of defendant's irrigated lands adjacent to Salmon River and its tributaries. These surveys were made with great

fidelity and attention to detail. The irrigated lands were classified according to the character of the crops grown thereon and different colors were employed to distinguish the various classifications. Every distinct tract, however small, possessing definite characteristics as to the kind of crop grown thereon, was surveyed and platted separately with the utmost precision. The exact location of every ditch, slough or other water channel was determined by surveys and then platted according to the adopted scale. The testimony shows that the surveys were made during the irrigation season while the water was either flowing over the ground from the ditches, sloughs or other water channels, or at a time so shortly thereafter as to enable the surveyors to ascertain without difficulty just what lands were under irrigation. (241.) These cultural maps and the testimony of the witnesses who made the surveys, constitute most satisfactory evidence as to the extent of irrigation by the defendant, even although the surveys were not made until 1914, for the reason that, with two exceptions (the Tunnel ditch on the Vineyard ranch and part of the High Line Canal at San Jacinto) the ditches as they existed on these lands in 1914 were the same ditches that were there as early as 1904. The lands under these ditches, shown by the cultural maps as being irrigated in 1914, were unquestionably under irrigation as early as 1904, because they consisted of native meadows, more or less level, and easily flooded. These cultural maps comprise defendant's Exhibits No. 7, No. 11, No. 12, No. 13, No. 14 and No. 15. Ex-

hibits numbered 11 and 12 cover the Vineyard and San Jacinto ranches and are corroborative in every detail of the testimony of Mr. McClellan and are in harmony with defendant's Exhibits numbered 4, 5 and 6 (heretofore referred to) produced by Mr. McClellan from surveys and observations made by him prior to 1904. To ascertain the acreage of the irrigated lands on Nall Creek, Upper Trout Creek, Big Creek, Hot Creek, Shoshone Basin and on the Hubbard ranch, it is necessary to consider the testimony of Robert W. Anderson (146-150), L. A. Nelson (153-155), George R. Bolding (157-158), W. G. Greathouse (176-178), James B. Steele (183-184), Henry Harris (218-220), and T. R. Beason, (211-215), in connection with the cultural maps marked defendant's Exhibit No. 7 (Trout Creek), No. 11 (Hubbard Ranch), No. 13 (Bridge Ranch), No. 14 (Nall Creek), and No. 15 (Shoshone Basin, Big Creek and Hot Creek). It appears conclusively from the testimony of these witnesses that the irrigation at these various fields was accomplished by means of ditches that were constructed prior to 1904. Indeed, there was no evidence introduced or offered by plaintiffs with reference to the irrigation of these fields. So far as we know it is not contended by plaintiffs that there has been any new ditch construction at any of these places. The acreage at these places, as shown by the evidence referred to is, at Nall Creek, 157.7 acres; Hubbard Ranch, 700.7 acres; Upper Trout Creek, 132.8 acres; Big Creek, 207 acres; Shoshone Basin, 834.7 acres; Hot Creek, 315.2 acres (269.2 acres

in Nevada and 46 acres in Idaho) ; Bridge Ranch, 405 acres ; a total of 2753.1 acres. This total added to the 928.8 acres of irrigated lands on the Vineyard Ranch and 5198.8 acres on the San Jacinto Ranch comprises the total irrigated acreage on the defendant's lands, with the exception of the lands hereafter to be considered lying under and susceptible of irrigation from that part of the High Line Canal lying north of the San Jacinto Lane. From this total there should be deducted 130 acres for the channel of the stream, (222) which would leave 8880.7 acres. This includes 132.8 acres of irrigated lands on Trout Creek, 105 acres of irrigated lands on the Hubbard Ranch, 137.8 acres of irrigated lands on the Bridge Ranch, 145.7 acres of irrigated lands on Nall Creek, 269.20 acres on Hot Creek in Nevada and 46 acres on Hot Creek in Idaho, that were omitted from the lands described in the decree. This omitted acreage, added to the 752.80 acres omitted in the decree from the irrigated area on the San Jacinto and Vineyard ranches, makes up the total acreage of irrigated lands erroneously excluded in the decree and mentioned in the thirteenth assignment of error.

Some of the omissions seem to have occurred through inadvertence in drafting the decree. For instance, all of the lands on Upper Trout Creek are omitted entirely from the decree, but similarly numbered sections in another township, remote from any of the streams in question, are included in the decree. In fact there is something over 3,000 acres of unirrigated lands described in the decree. What-

ever may be the explanation for the exclusion of irrigated lands and inclusion of lands not susceptible of irrigation, we can think of no possible theory upon which the same can be justified by any evidence adduced on the trial. Defendant's rights in connection with these omitted lands are among the oldest and best established of its water rights in that section of the country.

The status of appellant's rights with reference to the lands under the High Line Canal requires somewhat extended consideration, and before taking up that subject we will conclude the argument with respect to the *quantity* of water that the defendant is entitled to for the 8750.7 acres above mentioned.

DUTY OF WATER.

It will be observed that the 12,500 acre feet found by the Court to be the extent of defendant's prior rights in and to the waters in question, is at the rate of approximately $1\frac{1}{2}$ acre feet per acre; whereas, under the evidence, there would be required for the proper irrigation of these lands not less than $4\frac{1}{2}$ acre feet per acre. The evidence showed without contradiction that the system of irrigation employed from the beginning by the predecessors of defendant was one which required a much larger quantity of water per acre than is required upon lands under intensive cultivation and where the crops are of sufficient value to justify the adoption of the most economical methods of irrigation, however expensive they may be. On these ranch lands the hay and grass

produced was at best very limited in quantity and of rather a poor quality. There was, of course, no market for such crops and the only use to which they could be put was that of furnishing hay and pasturage for range cattle. As shown by the uncontradicted testimony of the witnesses for the defendant, it has always been and is the practice to irrigate such lands by the flooding system. As a consequence of this, crops of a peculiar character that have adapted themselves to such methods of irrigation, have become established. They are shallow-rooted crops and require almost constant application of water to keep them green and in a growing condition. (141-42.) It seemed to be the idea of the learned trial court that such a use of water, however necessary it might be for that class of crops, did not constitute a beneficial use; that it would be incumbent upon appellant to change the character of its crops from those that require this large quantity of water to a kind that could be grown with a much smaller quantity. We think this conclusion involves a fundamental error. It must be that the expediency of producing one kind of crop or another is a question that rests in the sole discretion of the owner of the land. These waters had been used in this particular way without let or hindrance from the very beginning of development in that section of the country. It will be admitted that the defendant's irrigated lands are located along the streams from which they are irrigated and are but slightly higher than the streams themselves. They would be practically level except for the swales

and sloughs that have been washed through them by the high water. The only practical method of irrigation is by flooding. The flow of the streams from which the water is obtained is variable in amount, gradually increasing in the early season until about the middle of June, and rapidly decreasing thereafter. The growing season is short and it is necessary to produce a rapid growth of grass while the water is plentiful. Thus it has become customary to flood the lands continuously from about April 1st until about the 20th of July. As suggested, the plant life on these lands has become adapted to those conditions. According to Mr. McClellan, whose experience in the irrigation of such lands has extended over a period of more than twenty-five years, it is absolutely necessary to flood the lands (119); that if such crops were not irrigated in that way there would be little or no grass grown (141); that it would ripen immediately and stop growing inside of a week or less (141); that rye grass will grow a little longer because the live roots extend a little deeper in the soil, but the roots of the other grasses are within a quarter of an inch of the surface; that even if rye grass has been irrigated for a few years by continuous flooding all of the deeper roots die, leaving only the surface roots, and as soon as the water is taken off the ground dries on the surface and there is no moisture for the roots and the growth stops (142); that the flooding method is carried on almost entirely on the stock ranches in Nevada and the crops are used for hay and pasturage (104, 138); that during

all of the time of his experience in connection with these lands the water was taken out through the various ditches up to their full capacity and used on the land. (143.)

Robert W. Anderson, another witness for the defendant, who had charge of the Hubbard Ranch for a few years, testified that the practice was to turn out all the water he could get from the creek; that he and others had followed the same practice for over thirty years (149); that he has been in the ranching business himself for seventeen or eighteen years at different places in Nevada and that the practice had always been to turn out all the water he could get on to the land and leave it there; that if he did not do so there would be no hay (149); that if the water was taken off a week or ten days before haying time the hay gets dry and is hard to stack (149); that on all of the other ranches with which he was familiar the irrigation was of the same character. (149-150.)

L. A. Nelson testified that the practice of flooding the lands was always followed while he was on these ranches between 1880 and 1892. (153-54.)

George R. Bolding testified that he had been acquainted with that part of the country for twelve or fourteen years and the flooding method, as employed in connection with the defendant's lands, was followed by the O'Neills and the Heslers on their lands higher up the river (158); that he did not know of any other character of irrigation on wild grass lands in Nevada. (158.)

W. G. Greathouse testified that it was necessary

in that section of the country to flood the lands in order to produce crops (180) ; that that is so even on meadow lands where it is too wet to raise sage brush (180) ; that prior to going to Elko he irrigated about 1,000 acres in Ruby Valley for three years and the irrigation was all done by flooding the land. (178.)

The testimony of these witnesses was not contradicted in any particular. Indeed, no attempt was made by the plaintiffs to prove that any other or different method of irrigation would suffice. No one at all familiar with the subject would even suggest that irrigation of that character could take place with less than $4\frac{1}{2}$ acre feet per acre, but in order to furnish the Court with a more definite estimate of the duty of water for such irrigation, the defendant called Don H. Bark (166-176), who possessed, as the record shows, very unusual qualifications as an irrigation expert. He was an engineer in the service of the United States Department of Agriculture and had been carrying out water investigations in Idaho for more than six years. Some of the investigations were conducted at places not far distant from the defendant's lands. There were something like 200 experiments, involving 600 five acre fields. Mr. Bark was familiar with the literature on the subject of irrigation, including reports published in foreign languages. He explained that the general object of his investigations was to conserve the use of water. (168.) If he had any mental bias, therefore, it would clearly be in the direction of an economic use of water. He had not personally investigated the irrigation of

such crops as those of the defendant and so far as he knew no one else had done so, but he had nevertheless made extensive investigations as to the use of water upon upland pastures, and we think it will be admitted that the irrigation of defendant's lands would require at least as much water as the irrigation of the upland pastures to which Mr. Bark referred. He said:

“In stating the ratio or relation, if any, that exists between the amount of water used on pasture lands and the amount of crops produced, I would say that up to a certain point the more water the more pasture. It doesn't differ materially from alfalfa, but it does differ very materially from potatoes and orchards and grain. You can very easily apply too much water to grains so that you will absolutely decrease the yield. In some cases where you apply three feet deep to grains you might raise less crop than if you didn't put any water on at all, but that isn't true of pasture. Up to a certain point the more water the more pasture, and it will require fully twice as much as for grains. I don't think I ever found the point in the pasture lands after which the application of more water would result in no increase, or an actual decrease, of the crop, because we never put water enough on. We have put about four and a half acre feet on upland pastures and we still got more pasture. Up to four or four

and a half acre feet on an average soil, I would state without qualification that the more water used the more crop would be produced. Whatever qualification there is will be based on something other than my actual experiments.” (168-169.)

Mr. Bark also testified that the quantity of water needed for a given project would depend upon the economic conditions surrounding such project, saying:

“To illustrate: Five tons of alfalfa per acre might be produced with two and a half acre feet of water, if your land was very carefully prepared and you gave considerable attention to the irrigation. But if that alfalfa was only worth \$3.50 a ton the farmer might go broke if he could only have, say, two acre feet per acre for that alfalfa. But if he could get \$10.00 a ton for that alfalfa he could afford to put the expense into the levelling and into the attention to the water, to make the water go just as far as it possibly could. The same thing will hold true with grains or with orchards. In other words, a man can afford to pump water to extreme heights on orchards if he is getting a good price for his fruit, but he couldn't afford to pump and give lots of attention to his water on pasture ground that was far removed from a railroad.” (170.)

No evidence was offered by plaintiffs in rebuttal of this testimony, and there is nothing in the record that tends to rebut it.

Joseph Jenson (200), an irrigation expert of great learning and experience, testified that he had visited the San Jacinto ranch in November of 1913 and made careful observations of the conditions respecting irrigation. He said (205) that the water table in the fall of the year when he was there was within about two feet of the surface of the land; that the soil was alkali and wherever that is so the flooding of the land is necessary, otherwise the alkali rises to the surface and kills any kind of vegetation growing upon that class of land. He said that he knew of no method of irrigation for such lands and for the production of such crops as were grown there except the flooding system. It is respectfully submitted that the testimony of these witnesses is more than sufficient to establish the fact that irrigation by flooding on those particular lands is more beneficial than any other system would be. The record shows that those lands are used principally as a pasture during the fall and winter for the large numbers of stock that range in the adjacent mountains during the summer time. All of the grass produced, whether on the meadows or intermingled with brush and willows, is available and valuable as forage. By what right, we ask, can it be said that appellant must use its lands in some other way so that appellees might perchance have their water supply increased?

Assuming that irrigation by flooding is reason-

ably necessary, it remains for us to estimate as best we can the quantity of water that would thereby be applied to these lands. It is obvious that there is a substantial quantity of water used in connection with that character of irrigation that in the very nature of the case is not measurable. None of the water that is diverted directly onto the lands by means of dams in the river and in the sloughs and other channels, without ditches, can be measured. It appears from the evidence that few if any experiments have ever been carried on for the purpose of determining the duty of water under these conditions. It cannot be denied at any rate that such irrigation requires a vastly greater quantity of water per acre than is required for upland pastures such as were mentioned in the testimony of Mr. Bark, where the irrigation would take place at more or less frequent intervals, with intermissions of considerable periods of time when there would be no water flowing upon the land. As we have already noticed, Mr. Bark concluded, after summarizing generally the results of numerous experiments he had been conducting, that he had seen at least $41\frac{1}{2}$ acre feet used on upland pastures and up to that amount the more water that was applied the better was the pasture (169). Since the trial of this case Mr. Bark's investigations have been published by the United States Department of Agriculture, Bulletin No. 339. While this document was, of course, not introduced as evidence in the case, it contains conclusions of a sufficiently scientific character as, perhaps, to jus-

tify reference to it at this point. In Table No. 3, at page 11, there is a tabulation of the effects of different quantities of water on alfalfa, clover and pasture during the season of 1910. On very gravelly soil (similar to the lands in question) the application of 6.352 acre feet resulted in a crop of alfalfa of 3.78 tons per acre. With 9.401 acre feet the same character of land produced 5.20 tons of alfalfa per acre. The experiment with red clover shows that with 6.92 acre feet per acre 3.78 tons were produced, but with 12.98 acre feet per acre 4.60 tons were produced. In Table No. 18, at page 35, it is demonstrated that not less than 6.43 acre feet per acre is needed for the irrigation of alfalfa on porous soils at elevations of from 2,600 to 5,800 feet. In Table No. 23, page 46, it is shown that the average quantity of water diverted for each acre irrigated under ten different canals during the season is 5.39 acre feet. The author says that this large use of water is somewhat wasteful, due to loss from the canals and in other ways that could be avoided. But it must be borne in mind that this use of water is at places where intensive irrigation of the more valuable crops is being carried on. Considering the character of irrigation that is necessary on defendant's lands, and the kind of crops that are grown there, defendant's claim for four and a half acre feet per acre is certainly not extravagant. It is equally clear that four and a half acre feet per acre is but a small fractional part of the quantity of water that has actually been used in the past for the irrigation of these lands. No

one can doubt that the constant flooding of lands during the irrigation season would require vastly more water than that which was used in any of the experiments conducted by Mr. Bark, or that were used in the farming communities to which he refers. We also call attention to Bulletin No. 172, published by the U. S. Department of Agriculture in 1906. At page 83 there is a table giving a summary of the duty of water measurements in three counties in the State of Montana. The average for the sixteen canals included in the investigations is 4.10 acre feet per acre. The author shows that water has been decreed by the courts in that state on about that basis.

Four and a half acre feet per acre for 8750.7 acres equals 36,760.5 acre feet.

The approximate quantity of water used for irrigation on these lands may be arrived at in another way. Mr. L. W. Beason, an engineer, (189) measured the capacities of sixteen of the ditches and found that they had a total capacity of 362.8 second feet. This includes the High Line ditch, whose capacity is 90 second feet, for our present purpose, this ditch may be eliminated. The other fifteen ditches have a total capacity of 272.8 second feet. This number of second feet flowing continuously for two-thirds of the time during the average irrigation season of approximately 100 days would amount to 36,372 acre feet. Even if the water was not kept in these ditches to their full capacity during two-thirds of the irrigation season, any allowance that should be made on that account is more than

offset by the fact that there are many other ditches not measured and not included in the foregoing. There are also many irrigation dams in the river channel and sloughs used for irrigation purposes but not considered in the above estimate. It is a significant and should be a persuasive fact that the ditches constructed prior to 1904 and now in use upon these properties, aggregate $49\frac{1}{4}$ miles in length. There are, therefore, $171\frac{1}{2}$ miles of ditches on these properties, the capacities of which are not included in the above estimate. It is inconceivable that the owner of these lands would go to the expense of creating such an irrigation system as the foregoing indicates for the purpose of using such an insignificant quantity of water as the decree awarded to the defendant. Furthermore, there was no occasion for parsimony in estimating the amount of water to which the defendant was entitled as a prior right. It appears conclusively from the evidence that these waters are used upon lands that lie at a very slight elevation above the stream and that after the same are used, with the exception of such quantities as are consumed in plant life and evaporation, they return directly to the river channel and flow thence into the reservoir of the plaintiffs. Indeed it appears that all of the bottom lands at the San Jacinto Ranch occupy an area that in all probability at one time constituted a small lake. All of the water that is used either on the land or that flows under the surface through this old lake bed is drained by the deep gorge that begins approximately at the Nevada-Idaho state line and

extends northerly to and beyond the reservoir of the plaintiffs. There is no possibility of any of the water escaping in any other direction. In this connection it should also be noted that enormous quantities of water escape and are wholly lost one way or another from the plaintiffs' reservoir. On account of the physical structure of the walls of the channel, which by placing a dam across it, is now utilized for the reservoir, there has been and undoubtedly will continue to be a tremendous loss as a result of the escape of water through the seams and cracks in the walls of the reservoir. This, added to the extensive evaporation on account of the large surface of the reservoir, constitutes a factor of great importance. According to plaintiffs' witness Darlington (84), the loss from the reservoir by seepage and evaporation varied from 64,181 acre feet in 1912 to 38,032 acre feet in 1914. Thus the plaintiffs are given the right to waste as much water on an average as would be needed for the complete irrigation of defendant's lands. This waste, furthermore, is not like that which may be said to result from an excessive use of water upon the defendant's lands, because it can not return to the stream for use lower down, and does no one any good. As we have said, it makes comparatively little difference how much water is diverted and used upon the defendant's lands because the return is directly into the channel. The court refers to this in its written decision, in the following language:

“All the lands irrigated by the defendant prior

to the commencement of the construction of plaintiffs' system lie close to the river channel, and the water table being near the surface the return flow by percolation and surface drainage to the river channel is naturally very great, so that the defendant's primitive and apparently extravagant method of using water is not so prejudicial to the plaintiffs' rights as it might otherwise be. While the evaporation incident to such a use may be somewhat excessive, still, at that altitude, and for the short irrigation season during which water is applied, I am inclined to think the amount thus lost is inconsiderable." (310.)

This being true, we cannot quite understand why the court conceived it to be justice to award to defendant only about one-fourth of the quantity of water that is actually needed for the irrigation of the lands in question.

In passing we might remark that there are some statements contained in the written decision of the court that have scant, if any, support in the record. It is evident that the court minimized the defendant's rights from almost every angle. The following statement, contained in the decision, is illustrative of this:

"While it may be admitted that within reasonable bounds the application of water for the growth of wild grass for pasture alone may be held to be a beneficial use sufficient to support an appropriation, claims such as are here

made should be subjected to the closest scrutiny. I am not inclined to regard the desultory flooding of sagebrush land with the high water of a stream, in the crude method here employed, for the mere purpose of adding slightly to the growth of sparse natural vegetation, as furnishing a sufficient basis for the award of a water right adequate for all purposes. It is rudimentary, of course, that water may be appropriated for any beneficial use; but beneficial use is a phrase of relative meaning. Many uses can be conceived of, which, in an attenuated sense, are beneficial, but which would not support an appropriation; as a basis of a right the use must be of substantial benefit. It would require a high degree of courage, for instance, to affirm that the citizen can, to the exclusion of those who would use it for the raising of grains and fruits and other ordinary agricultural products, acquire the right to divert and spread out over thousands of acres of sagebrush land, upon which no homes are built, water at the rate of an inch per acre for the purpose of increasing the growth of wild grass from one-twentieth of a ton to one-tenth of a ton per acre. The use would in a literal sense be beneficial, but the benefit would be insignificant.” (315-316.)

It certainly cannot be shown from the record that the defendant laid claim to the irrigation of any

lands "for the mere purpose of adding slightly to the growth of sparse vegetation." Nor do we call to mind any testimony justifying the inference that defendant was claiming any considerable amount of water for the purpose of a desultory flooding of sagebrush land with high water, or of increasing the growth of wild grass from one-twentieth of a ton to one-tenth of a ton per acre. However, the court's conclusion that this last mentioned use would not be a beneficial use is, as a legal proposition, extremely doubtful, to say the least. Judge Hawley, in *Rodgers v. Pitt*, 129 Fed. 932, says:

"Looking further into the facts it will be discovered that, after the defendants had diverted the water of the river on to their lands, their acreage steadily increased year by year until they had about 4,000 acres under cultivation. In the estimates made by defendants of the number of acres under cultivation on complainant's land, they apparently overlook the plowed ground, and ignore the number of acres of pasture land or wild grass that were irrigated. It is in effect claimed that the use of water for pasture and for wild hay was not for a beneficial purpose. The courts have held otherwise. In *Pyke v. Burnside* (Idaho), 69 Pac. 477, it was expressly held that where one constructs a ditch and conducts water upon his land year after year, and permits the same to spread out over wild hay land for the purpose of making hay or using such land for pasture,

he thereby secures the right to the use of sufficient water to irrigate such land, provided the amount of water so used is sufficient for that purpose; such use being a beneficial one."

To the point that it does not lie within the province of a court to compel users of water to adopt any particular system, the following language is quoted from the same opinion, and expresses our view of the law:

"Absolute perfection in the system of irrigation in this state, has, perhaps, not yet been reached, and it is doubtful if any system could be devised that would not, in the opinion of some scientists and experts, 'be defective more or less.' The contention that the prior appropriators of the water ought to be compelled to change their system for the exclusive benefit of the subsequent appropriators, who use the same system, does not appeal, in the light of all the facts in this case, very forcibly to a court of equity, as being sound. It would seem more just to allow the complainant to change his system, if he can and desires so to do, and to adopt any system that would allow him to so use the amount of water to which he is entitled as would enable him to cultivate more of his land. The court cannot, in the absence of any law upon the subject, compel the farmers to use any particular system, but it might, in a case where an extravagant and wasteful system is used, which demands more water

than they are entitled to by virtue of their appropriations, declare that under such circumstances they were not entitled to the quantity of water they were using, and give the excess to subsequent appropriators. But this is not such a case. The testimony shows that the system referred to is used by all the farmers in Lovelock Valley—by the defendants as well as by the complainant.”

The trial court also says in its decision that it is unwilling to award three acre feet per acre for defendant's grain and hay lands and only one and one-half acre feet generally for the lands upon plaintiffs' project. This conclusion was reached notwithstanding the fact that the only evidence there is in the record concerning the duty of water on plaintiffs' lands is the testimony of their own witnesses in which it was stated that the duty of water for those lands is *one and one-half acre feet per acre*. (68.) Again, the evidence, without conflict, shows (169) that it requires fully as much water for the irrigation of pastures as for the irrigation of grains. Yet the court says in its decision: “ * * * three acre feet would be a reasonable seasonal allowance to be made for hay and grain land and one and one-half acre feet for pasture.” (318.) This statement is also contained in the decision: “I cannot believe that there is any serious need for water at such an elevation prior to the first of May.” (317.)

Mr. McClellan testified (119), “The irrigation extends from on or before the first of April to between the first and tenth of July.”

Mr. Yost, a witness for plaintiffs, testified (257), "Each year I would be irrigating something like three months, beginning with the first of April."

Thomas R. Beason (216), said: "It (the water) was turned on this spring about the first of April or maybe along in March."

Our recollection is that there is absolutely no evidence to the contrary. Indeed, the defendant's claim that the irrigation season commenced not later than the first of April was not contested on the trial.

The finding in the decision to the effect that defendant had under irrigation prior to 1907 only 3,000 acres of hay and grain lands and 2,500 acres of pasture lands is, we submit, arbitrarily made. According to the testimony of plaintiffs' witnesses, Darlington and Stocking, in connection with plaintiffs' Exhibit No. 33, defendant had under irrigation only about 2,600 acres. As is evident, the court did not adopt this exhibit or the testimony of these witnesses in connection with said exhibit as a basis of arriving at the defendant's irrigated acreage. The court having rejected the only testimony introduced by plaintiffs with respect to the acreage, we cannot conceive of any reason why it did not find the facts in accordance with the only remaining evidence, that is to say, the evidence of the defendant.

The court in its decision also infers that it was able to come to some conclusion concerning the quantity of water used upon the defendant's lands from data contained in the Herrington Report. This report was not formally introduced in evidence at the

trial but it was stipulated that it might be considered by the court the same as if it had been introduced, and for that reason it has been certified to this court in the same way as maps and other exhibits that were not incorporated in the printed transcript.

We submit that there is nothing in the Herrington report that justifies the deductions mentioned in the court's decision. It is true that in Table 4 of said report, it appears that the defendant diverted 16,206 acre feet during 1914. But it must be remembered that the author of the report did not pretend, in arriving at the above estimate, to take into consideration all of the diversions made by the defendant in that year. On the contrary, the diversions accounted for include only those in ten of the defendant's ditches, and covered only a portion of the irrigation season. The measurements covered a period of 50 days on the Upper Vineyard ditch, 60 days on the Lower Vineyard ditch, 12 days on the Bird's Nest ditch, 20 days on the Island ditch, 65 days on the San Jacinto or Middle ditch, 24 days on the West Bore's Nest ditch, 21 days on the East Bore's Nest ditch, 18 days on the Harrell ditch, 60 days on the High Line ditch, and 65 days on the North Side ditch on the Bridge Ranch. The earliest measurements were made on the 16th of May and therefore do not include any of the irrigation that took place prior to that time. If it be assumed that the canals during the period from April 1st to May 16th carried water to their full capacity, there would be a total of more than 35,000 acre feet applied to the land in addition

to the 16,206 acre feet accounted for by the author of the report. It must also be noted that no measurements were made on the Hubbard Ranch, or on Nall Creek, Upper Trout Creek, Big Creek, Hot Creek, Shoshone Basin or from Jake's Creek on the Vineyard Ranch. Likewise no measurements were attempted to be made of any of the waters that were placed on the lands by means of dams in the main channel and in the sloughs and other natural water courses. At page 4 of the report the author says:

“The secondary object of the investigation, namely, the determination of the total quantity of water actually diverted for irrigation use upon the lands of the Utah Construction Company, is necessarily somewhat indeterminate, because of the flooding system of irrigation followed during the early part of the season when large quantities of water were flowing in the streams.”

On page 7 of the report it appears that the water used for irrigation from the upper half mile of the Bird's Nest ditch was not taken into account. On page 9, second paragraph, of the report, it is made clear that no account was taken of any of the water diverted through the Moore cut, the Lower Island ditch, or the Gray ditch, onto the tract referred to in the testimony as the Island. It is very clear therefore that the diversions accounted for in this report are wholly insufficient to furnish a basis for estimating the total diversions onto the defendant's lands in the year 1914.

Before leaving this subject we suggest that some regard should be paid to the conditions that have heretofore prevailed in that section of the country where defendant's lands are located. They are remote from railroads and from settled communities. Intensive farming is not practicable. Such crops only could be produced profitably as served to furnish sustenance, in the form of hay and pasturage, for cattle and horses. Into the fields the cattle were gathered in large numbers in the fall and winter, and it would have been a positive disadvantage to have had any kind of crop that needed protection from the animals. It stands to reason that under these conditions the defendant would not be justified in making an outlay of money sufficient to enable it to carry on irrigation the same as that carried on for the purpose of producing crops possessing a high market value.

APPELLANT'S RIGHTS UNDER THE HIGH LINE CANAL.

The trial court found that the defendant was entitled to 12,000 acre feet of the waters of said streams for use upon the lands located under and susceptible of irrigation from the High Line Canal, but declared such right to be subsequent and subject to plaintiffs' rights. As already stated, this co-called right of the defendant is valueless. Admittedly, plaintiffs were decreed rights of such lavish proportions as to entitle them to many times more water than Nature has provided in Salmon River. So that any right that is made subject to plaintiffs' rights

would exist in name only. We think the court erred in not finding that the defendant's rights under the High Line Canal were prior to plaintiffs' rights.

This canal is referred to in the record by different names. It has been called the High Line Canal, the Harrell ditch, and the Big ditch. Its location appears on defendant's Exhibit No. 12, and other exhibits, and is the ditch whose diversion point is on the east side of the main channel of the stream at the upper end of the San Jacinto Ranch. It extends northeasterly for a distance of about eight miles. At a distance of about four miles below the head of the ditch it crosses what is referred to in the testimony as the San Jacinto lane. The importance of mentioning this point in the canal will more clearly appear later on. The lands below the San Jacinto lane that have been and are to be irrigated by means of the canal are colored yellow on Exhibit No. 12, and, as already stated, aggregate approximately 4,500 acres. The highest of these lands lie at an elevation of approximately 100 feet above the bottom lands, and there is a gradual slope from the canal to the edge of the bottom lands on the east side of the stream. It will be seen that the canal is only about two miles from the channel of the stream at its remotest point. The lands under the canal were originally covered with sagebrush, and, when supplied with irrigation, are capable of producing valuable crops of cereals and alfalfa. The sagebrush has been cleared and the area colored yellow on Exhibit No. 12 has been placed under cultivation, with alfalfa as the prin-

cipal crop. It is not claimed that this was done prior to the initiation of plaintiffs' rights. It is respectfully contended, however, that defendant's rights to the use of water for the lands under the High Line Canal *relate* to a date prior to December 29, 1900, the date of the first appropriation made by plaintiffs. We will proceed to give a brief history of the construction of this canal and of the application of water to beneficial uses thereunder, and will start with the notices appearing at pp. 287-88 and 291-95, of the Transcript. The court restricted the purposes for which these and other similar notices relating to other ditches, were received in evidence. Inasmuch as this ruling of the court forms the basis of the seventeenth assignment of error, we will briefly consider that assignment at this point. Omitting the notices that do not relate to this canal, it is as follows:

“XVII.

“The court erred in limiting the purposes for which defendant's Exhibits numbered 2, 3, 8 and 9 were receivable in evidence, and in ruling that said exhibits were admissible for the sole purpose of showing an affirmative act in the way of instituting water rights at the dates of said exhibits, respectively, in the same way as any other act, as the making of a survey, might be taken as evidence of an intention to appropriate water at that time.

“Defendant's Exhibit No. 2 contains the following:

“(a) The original notice of location of the

Harrell Ditch (or High Line Canal). It is executed and acknowledged by John Sparks, president of the Sparks-Harrell Company, on the 28th day of November, 1892, and was filed for record in the office of the County Recorder of Elko County, Nevada, on the day of November, 1892. It states the point of diversion, the length, width and depth of the proposed canal, and a general description of the lands (aggregating about 4,000 acres) to be irrigated. It claims 5,000 miners' inches of water from Salmon River. A plat is attached to the notice showing more particularly the location of the ditch, as well as of the lands to be irrigated.

* * * *

“(c) Water and ditch location notice relating to the Harrell Ditch (or High Line Canal). It was executed by John Sparks, president, and Andrew J. Harrell, secretary, of the Sparks-Harrell Company, and acknowledged on the 9th day of June, 1899; it was filed for record in the office of the County Recorder of Elko County, Nevada, on the 12th day of June, 1899. It gives a particular description of the point of diversion, location, length and other dimensions of the proposed canal, as well as a description of that part of the canal already constructed; it states that it is made to describe all changes from the survey of November 5, 1892, and to give a more definite de-

scription of the lands covered and to be irrigated therefrom. The lands to be irrigated are specifically described (being the same lands as those under the canal as now constructed) and is accompanied by a map showing the location of the ditch and the lands to be irrigated therefrom. The line of the proposed canal is the same upon which the canal was afterwards constructed.”

* * * *

At the time the notices were received in evidence the court limited the purposes for which they were to be received to “the sole purpose of showing an affirmative act in the way of initiating water rights at the date of the respective exhibits, in the same way that any other fact, as the making of a survey, might be taken as evidence of intention to appropriate water at that time, but said exhibits are not to be received for any other purpose or to be regarded as having any other legal effect.” (99-100.) It was the defendant’s contention at the trial that the true legal effect of these notices was much broader than that expressed by the court. They were filed with the proper officer and recorded in pursuance of statute, and constituted, as we contend, constructive notice to plaintiffs of the facts set forth therein. At the time the notices were filed the following statute was in force and effect in the State of Nevada:

“Section 1. Any person or persons desiring to construct and maintain a ditch or flume, within any one or more of the counties of this state, shall make, sign, and acknowledge, before

some officer entitled to take acknowledgments of deeds, a certificate, specifying: First, the name by which the ditch or flume shall be known; and, second, the names of the places which shall constitute the termini of said ditch or flume. Such certificate shall be accompanied with a plat of the proposed ditch or flume, and shall be recorded in the office of the County Recorder of the county or counties within or through which such ditch or flume is proposed to be located; and the record of such certificate and plat shall give constructive notice to all persons of the matters therein contained. The work of constructing such ditch or flume shall be commenced within thirty days of the time of making the certificate above mentioned, and shall be continued with all reasonable dispatch until completed.”

425 Compiled Laws of Nevada, 1861-1900,
Sec. 1.

Section three of the same Act is as follows:

“Sec. 3. The person or persons constructing or maintaining a ditch or flume, under the provisions of this Act, shall have the undisturbed right and privilege of flowing water through the same, to the full extent of its capacity, for mining, milling, manufacturing, agricultural and other domestic purposes, and to use the same at any necessary and convenient point or points along the line thereof; provided, that nothing in this Act contained shall be so construed as to interfere with any prior or exist-

ing claim or right. *As amended, Stats. 1889, 96.*"

The history of the physical construction of the ditch, briefly stated, is about as follows: The work commenced in 1893, and during that year the ditch was completed for a distance of about ten chains. (130.) In 1894 the Roland Slough was enlarged and made a part of the ditch (130), and about half a mile of lateral ditches was constructed from this slough. (130-31.) In 1897 Mr. McClellan surveyed and located the ditch on its present site for a distance of 77 chains, and construction work on this survey commenced in that year. (131.) In 1898 the survey was continued on the present line of the ditch for a distance of 253 chains, to a point opposite the San Jacinto lane. (131.) In 1899 an amended location notice (part of defendant's Exhibit No. 2) (291-295), was filed with the County Recorder of Elko County, Nevada, and this notice, besides giving the dimensions of the ditch, specified the lands that were to be irrigated therefrom. The lands as described in the notice are the same as those that now lie under the ditch as completed. In 1899 Mr. McGuire had charge of the ditching crews, first under Mr. Moore and later personally, and continued the construction to a point about a quarter of a mile north of Warm Springs lane. (162.) Work was also done on the ditch under Mr. Rainwater in 1900. (160.) In 1901 he had personal charge of the work and the ditch was extended northerly for a distance of about three-quarters of a mile, to the San Jacinto lane. In 1904

Mr. McClellan extended the survey to the terminus beyond the San Jacinto lane (132), and in the same year construction was continued from the San Jacinto lane northerly for a distance of about a quarter of a mile. The last work that Mr. McGuire remembered doing on the canal was in the latter part of June or the first part of July, 1904. (161.) The ditch, as constructed to the San Jacinto lane, being a distance of about four miles, was about ten feet wide on the bottom. (160.) It appears that no more work of any consequence was done between July, 1904, and some time in May, 1909. In the meantime the managing owner of the property, Mr. Andrew Harrell, had died (223) and the property had been purchased and taken over by this appellant, whose agent, Mr. Adam Patterson, took charge in November, 1908. As soon as the season opened up in the following year Mr. McClellan was employed by the appellant to make a re-survey, and this was done. (166.) In May or June, of the same year, Mr. Patterson commenced the work of construction and thereafter diligently pursued the same until the canal was completed. In 1911-12-13 and 14, land under the canal approximating 4,500 acres was cleared, plowed and planted. On the assumption that there will be no contention that the work was not diligently pursued after the appellant became the owner of the property, we will refrain from rehearsing in detail the testimony with reference to the completion of the canal from the point it had reached in 1904. The facts relative to these matters appear in the tes-

timony of Adam Patterson (166) and Thomas R. Beason. (213-217.)

The court's analysis of the evidence relating to the progress of the construction of the High Line Canal appears in the decision (310-315), but we think the real point is missed. The precise point to be determined is this: What was the status of defendant's appropriation of water for the High Line Canal on December 29, 1906, when appellees' application for appropriation was filed with the State Engineer of the State of Idaho? It seems to us that the lapse of time between the commencement of the canal in 1893 and the date of filing the second notice of appropriation on the 12th day of June, 1899, is wholly immaterial. It must be admitted that under the evidence appellant's right was alive when this second notice was filed. From that time until some time about the first of July, 1904, the work of construction proceeded with reasonable diligence. From that date until plaintiffs filed their application, there was apparently nothing done on the canal in the way of additional construction. Neither was there anything done in 1907, the year in which Mr. Harrell died, nor in 1908, the year in which the negotiations for the sale of the property to the defendant took place. That is to say, for a total period of something more than four years, no work was done for the purpose of extending the ditch. Thereafter, however, the work was continued; the ditch was completed and the lands brought under cultivation within a reasonable time. Can it be said then, as a matter of law,

that appellant's rights lapsed on account of the cessation of work on the canal for the two years just prior to the filing of the application for appropriation by plaintiffs, or even for the period of a little more than four years from June or July, 1904, until the spring of 1909? It must be remembered that this section of the country is remote from any railroad, and has long winter seasons in which such work as the construction of canals cannot be economically performed. Neither the defendant nor its predecessors in interest had any notice or intimation whatever of any attempt by plaintiffs or anyone else to appropriate any of these waters during this period. The plaintiffs' filing was made in the office of the State Engineer of the State of Idaho, and there was, of course, no record of it in any public office in Nevada. Plaintiffs' works were located many miles down the stream in an isolated and more or less inaccessible section of the country. The defendant's lands, including the several properties hereinbefore mentioned, were scattered over a wide area and were used only for ranching purposes. So far as the record discloses anything in this regard, it has never been the intention of the defendant or its predecessors in interest to attempt to bring any of these lands, with the exception of the tract under the High Line Canal, under intensive cultivation. There is some suggestion in the court's decision to the effect that about the time the plaintiffs filed on this water there was generally known to be more or less activity along the line of irrigation development throughout the West;

yet there is nothing in the record to indicate that there was anybody so optimistic as to believe that any very extensive irrigation development would ever take place along the barren reaches of the Salmon River and its tributaries where the defendant's lands are located, or, for that matter, anywhere else in that section of the country. It is not surprising at all that it is only within recent years that the plans which had their inception in the early nineties with respect to the lands under the High Line Canal were consummated. Like all properties similarly situated, covering extensive areas, on account of the sparse growth of vegetation, the development has necessarily been much slower than in communities where the lands were fertile, readily accessible and within easy reach of the markets. It would be manifestly unfair and unjust to expect the same progress of development on these lands as has taken place for example under the plaintiffs' project. Notwithstanding all of the inducements for expeditious development on plaintiffs' project, in eight years subsequent to the filing of the first application for appropriation there was only 30,000 acres of land brought under irrigation. We submit that in determining defendant's rights in the premises all of the surrounding circumstances and conditions, and the standards prevailing in wild and unsettled sections of the mountain states should be taken into consideration. There is, and can be, no hard and fast rule as to what does or what does not constitute reasonable diligence in the application of water to a beneficial use. In some cases

it has been held that the lapse of comparatively short periods of time would thwart an attempted appropriation, while in other cases periods of eight or ten years have been held not to be unreasonable. *Moss v. Rose*, 27 Ore. 595, *Rodgers v. Pitt*, 129 Fed. 932, and *Hall v. Blackman*, 8 Idaho 272, are illustrative. It is the public policy of the State of Nevada, as declared by section 65, chapter 140, of the Session Laws for 1913, that a maximum of *ten* years should be allowed for the purpose of applying water to a beneficial use. The statute provides that the State Engineer shall, among other things, endorse upon an application "a time prior to which the complete application of the water to a beneficial use must be made, which time shall not exceed *ten* years from the date of said application."

It cannot be denied that defendant's predecessors in interest intended to appropriate water sufficient to fill the High Line ditch. It is equally incontestable that there has been an actual diversion of the water through this ditch ever since it was completed as far north as the San Jacinto lane. The size of the ditch, as it appeared when plaintiffs made application for a water right, constituted notice in concrete form of the intention of the then owners to irrigate the lands that were afterwards brought under cultivation. Above the San Jacinto lane there was only a narrow strip of land to be irrigated from this ditch. A small fractional part of the water that the ditch would carry would be sufficient to irrigate the lands in this strip. This fact, considered in con-

nection with the notices of location, was ample notice to the world that it was the intention of the predecessors in interest of defendant to irrigate these lands. It was in the face of this situation that plaintiff saw fit to file on these waters for speculative purposes.

It certainly is a drastic penalty to hold that defendant got absolutely nothing as a reward for all that it and its predecessors have done in connection with this canal. It seems to us that it is a case that calls for a liberal application of the principles of law appertaining to appropriations of water. If appellees had been misled in any particular it would be quite a different matter. Far from being misled in the premises, they had both actual and constructive notice of appellant's rights, and never gave any intimation of a conflicting claim with respect to the use of waters until this suit was filed. It is not unreasonable to indulge the suspicion that it is the litigation between plaintiffs and the settlers, to which the court refers in its decision, and that only, that has called forth the effort on the part of the plaintiffs to assert their claim of superior rights, in the hope, perhaps, that in so doing they would partially extenuate their failure to supply water to the settlers. For, even if it be conceded that plaintiffs have the superior right, the loss to them and their settlers that would result from the irrigation of the lands under the High Line Canal would be so insignificant as to be negligible, particularly so when compared to the loss sustained by defendant if its

superior right under this canal is denied it. From the physical conditions generally, including the location of these lands, the character of the soil, sub-soil, and underlying strata, it is plain that the water used for irrigation naturally and necessarily flows back into the stream below, with the exception of the small part that is consumed by plant life or evaporates. We do not deem it necessary to cite numerous cases with reference to what constitutes a valid appropriation of water, but taking everything into consideration, we think the facts of this case call for the application of the liberal rule announced in such cases as *Kimball v. Gerheart*, 12 Cal. 27, where it is said:

“In appropriating unclaimed water on public lands only such acts are necessary and only such indications and evidences of appropriation are required as the nature of the case and the face of the country will admit of and are under the circumstances and at the time practicable; and surveys, notices, stakes and blazing of trees followed by work and actual labor without any abandonment will in every case where the work is completed, give title to water over subsequent claimants. * * * In determining the question of plaintiff's diligence in the construction of their ditch the jury have a right to take into consideration the circumstances surrounding them at the date of their alleged appropriation, such as the nature and climate of the country traversed by

said ditch, together with all the difficulties in procuring labor and materials necessary in such cases.”

Also in I Wiel on Water Rights, Third Edition, page 415, where it is said:

“Diligence does not require unusual or extraordinary efforts, but only such constancy and steadiness of purpose or of labor as is usual with men engaged in like enterprises.”

What is referred to in Wiel as the doctrine of appropriation for future needs is peculiarly applicable to the facts of this case. This doctrine is stated quite fully in I Wiel on Water Rights, Third Edition, sections 483 to 485-a, and numerous cases there cited. The following is from section 483:

“In considering the amount of water to which an appropriator is entitled, there is introduced a new feature to meet the requirements of irrigation. The history and principles so far stated show that the system of appropriation aims fundamentally at definiteness and certainty. It allowed the prior appropriator to take what he wanted and do with it what he wanted, if he let the world know, so that later comers would have to take things as they found them, and would know what they could take. * * *

“The need for water grows as the area cultivated grows. The settler can cultivate, perhaps, only a few acres the first year; but he does everything with a view to later expan-

sion. As is said in one case, it is reasonable to suppose that reclamation of the entire area owned at the time of diversion is contemplated. Before his larger acreage is clear and planted, however (which may take several years), other claimants to the use of the water have arrived. Does the law allow the former to continue increasing his use in the face of these later claimants?

“It seems well settled that such is the rule. The amount used need not be a fixed, constant quantity. The amount used is still a limit, as previously set forth. But it is a movable limit, which may gradually increase as the irrigator’s needs increase. The principle has been repeatedly affirmed. In California this principle was affirmed in *Senior v. Anderson*; though the enlargement was not upheld on the facts of the case. There seems no other California decision on the point, the court relying on Oregon cases. In a later case the California Court said: ‘There are cases which hold that the diversion of a large quantity of water is a good appropriation of the whole *ab initio*, although it is not all used at first, if the design is gradually to extend the use, and that design is carried out before an adverse appropriation of the surplus below the point where it is returned to the stream. But this is a point which has not been argued, and we merely allude to it in passing.’ The essential

point of the rule is not correctly stated in this passage, since the essence of the rule is that the design may be carried out in spite of an intervening appropriation elsewhere on the stream, as the quotations below show.

“The same doctrine has been applied to future enlargement of use for power purposes as well as irrigation.”

The limitations upon the principle of providing for future needs are stated in section 484, from which the following is a quotation:

“First, the future needed amount must be originally claimed at the time of initiating the appropriation; being the limitation already stated, to the original claim. The future needs must have been in mind and claimed at the time the appropriation was originally made, and not a mere afterthought. That is, the enlarged use must be part of an original policy of expansion. Otherwise, it cannot prevail over interveners. Water for future needs must have been part of the original appropriation, and if a decree settling rights is made, such right, if not included therein, cannot be claimed thereafter. Use on after-acquired land must have been contemplated at the time of the original appropriation.

“Second, the future enlargement cannot exceed the original capacity of the ditch. Among the settled propositions of the law of appropriation, Judge Hawley includes the following:

‘That if the water is used for the purpose of irrigating lands owned by the appropriator, the right is not confined to the amount of water used at the time the appropriation is made; that the appropriator is entitled not only to his needs and necessities at that time, but to such other and further amount of water, *within the capacity of his ditch*, as would be required for the future improvement and extended cultivation of his land, if the right is otherwise kept up.’ ”

As to the duty of water for the irrigation of the lands under the High Line Canal, appellant concedes that it is somewhat higher than would be required for the irrigation of the meadow lands. From the fact, however, that the land is still used for ranching purposes and cannot be cultivated and cared for in the same economic way that small holders of lands would care for their farms, it certainly is not unreasonable to ask for three acre feet per acre, or a total of 13,500 acre feet for the 4,500 acres of land.

The Decree is Erroneous in Quieting Title in Plaintiffs to More than 45,000 Acre Feet of Said Waters.

Under this head the third and tenth assignments of error can be conveniently discussed. These assignments are as follows:

“III.

“The court erred in decreeing absolutely to plaintiffs any of the waters of Salmon River and its tributaries in excess of the quantity, to-wit, about 45,000 acre feet, which has been

used by plaintiffs for beneficial purposes, and in enjoining the defendant from using any of such excess waters prior to the actual application of the same to the beneficial uses for which said waters are claimed, and in making and entering any decree herein with respect to such excess, except to determine the amount thereof that can be diverted through plaintiffs' works and the priority of the same, and to set a time within which such amount of such excess shall, subject to the rights of the defendant, be applied by plaintiffs to the purposes for which the same is claimed." (343.)

"X.

"The court erred in making and entering its decree herein awarding to and quieting title in plaintiffs to the right to use each season 235,000 acre feet of the waters of said Salmon River and its tributaries, and in awarding and decreeing to plaintiffs any quantity of said waters in excess of 45,000 acre feet, and in decreeing that any right of plaintiffs to the use of said waters is prior to any right of the defendant thereto." (345-46.)

It will be remembered that in 1915 when this cause was tried, there was under irrigation under plaintiffs' project approximately 30,000 acres of land. (66.) The duty of water, as then claimed by plaintiffs, was one and one-half acre feet per acre (68), which would amount to 45,000 acre feet. The court awarded to plaintiffs 235,000 acre feet of the

waters of said streams. (319, 323.) Thus the decree seems to be based on the theory that plaintiffs were entitled to a decree fixing their vested as well as their inchoate rights under their permits, and enjoining the defendant from interfering in the future with such rights, either vested or inchoate. There have been instances, it will be conceded, in which decrees have been entered granting injunctions against future violations of plaintiffs' rights, in the absence of any present infringement or damage. These cases, however, are all confined to the protection of rights that have already vested, although they may be not at the time infringed. For instance, a riparian owner, whose title does not depend upon beneficial use, may be entitled to a declaratory decree protecting his present rights as against any future invasion, but the rights of the riparian owner under such circumstances are present rights, not rights to be earned *in futuro*. The same doctrine is applied in cases of the diversion of underground waters, where, as in *Burr v. Maclay*, 98 Pac. 260, it is said:

“If the adjoining overlying owner does not use the water, the appropriator may take all the regular supply to distant land *until* such landowner is prepared to use it and begins to do so.”

This is upon the principle that the owner of underground water, by virtue of the ownership of the lands in which it is found, has the present right to its use, but he should not be allowed to enjoin its use by another who draws it out or intercepts it or to whom

it may go by percolation, although perhaps he may have a right to a decree settling his right to use it when necessary on his land if a proper case is made. But in both of the instances discussed above, that is, the right of a riparian owner and the right of an owner of land to its underground waters, there was involved present actual rights, not prospects contingent upon future acts. By reference to the decree it will be seen that the lands described therein and for the irrigation of which plaintiffs are awarded water rights, include an area of more than 221,520 acres. This includes over 148,520 acres more than water rights have been sold for, and over 191,520 acres more than was under irrigation at the time of the trial. Considering the quantity of water wasted from plaintiffs' reservoir and distributing system, in connection with the limited water supply available, it would seem to be extremely doubtful if there will ever be under this project a very much greater area brought under irrigation than existed in 1914. The court, nevertheless, quieted title in plaintiffs to 235,000 acre feet, of which the excess over 45,000 acre feet had admittedly never been applied to a beneficial use, and as to whether any part of such excess would be so applied is a matter of conjecture pure and simple. The decree of the court quieting title to this excess is erroneous on general principles and in violation of the following provisions of Chapter 35, Laws of Idaho for the year 1913, amending section 4621 of the Revised Statutes:

“In allotting the waters of any stream by the

District Court according to the rights and priorities of those using such waters, such allotment shall be made to the use to which such water is beneficially applied, and when such water is used for irrigation, the right confirmed by such decree or allotment shall be appurtenant to and shall become a part of the land which is irrigated by such water, and such right will pass with the conveyance of such land, and such decree shall describe the land to which such water shall become so appurtenant. The amount of water so allotted shall never be in excess of the amount actually used for beneficial purposes for which such right is claimed; *provided*, that in the case of works capable of diverting more water than is applied to a beneficial purpose at the time the rights of the person or persons owning or using such works are adjudicated by the Court, the right only to the water beneficially applied at the time of making such allotment shall be confirmed by the court, and the court shall ascertain the amount of water which can be diverted through such works in excess of such quantity beneficially applied, and shall set a time when such amount shall be applied to the beneficial purpose for which it is intended, which time shall not exceed six years from the date of the decree issued by such court under such adjudication, and any person using any of such water which was not beneficially

applied at the time of such adjudication shall, before the expiration of the time set for such beneficial application, make proof of such beneficial use in the manner provided in Section 3260 of the Civil Code, and such right, when confirmed in the manner provided in this Chapter and Chapter 2 of Title 9 of the Civil Code shall relate to the priority established by such court, and if such application of any of such water shall be made subsequent to such date, then the priority of the right to the use thereof shall be determined in the manner provided in Section 3261 of the Civil Code."

The Supreme Court of Idaho, in *Sugar Company v. Goodrich*, 147 Pac., at page 1076, say:

"The state is the sovereign owner of the right to appropriate and use all of the stream waters which are within the jurisdiction of the state. The state, by enactment of appropriate laws, permits private persons to use its right to appropriate and use the flow of stream water. A water right claim is not a water right. A water right claim is a declaration of intention, made in a written form prescribed by statute, to give public notice of intention to create water rights identical with descriptions stated in the writing, commonly referred to as a water right. Although they are not, water right claims have become commonly regarded as being the same thing as water rights. One is a mere declaration of intention to cre-

ate a water right which may never be anything more than an intention. By a compliance with conditions of the permit, the water right claim then becomes a water right. The statute may permit an appropriator to change any or all of the conditions contained in the declaration of intention, except the particular stream from which the diversion is intended to be made, but it could not be successfully maintained that a subsequent appropriator's right to the use of the waters of a stream should be impaired by a change in the declaration of intention to appropriate by the act of the party, or with the consent of the state engineer, or to change the point of diversion. The extent of the permit of the state is measured by the use of the water under the conditions and limitations of the permit. A failure to put the water to a beneficial use, or to comply with the conditions of the permit, is an abandonment of the use, and this would be true whether or not there was a statute containing such a provision."

Numerous authorities might be cited in which the principle now under discussion has been applied. The following brief quotations will serve to illustrate the manner in which the principle is applied to water cases.

In *Miles v. Butte Electric & Power Co.*, 79 Pac. 549, it was said:

"Until a claimant is himself in a position to

use the water of a stream subject to appropriation, the right to the water or water right does not exist in such sense that the mere diversion of the water by another is a ground of action either to recover the water or for damages for the diversion.”

In *Green Valley Ditch Co. v. Frantz* (Colo.), 129 Pac. 1006, the court say:

A decree for plaintiffs in an action to quiet title to an irrigation ditch and its appropriation therefrom should be limited to the amount theretofore actually carried through the ditch and applied to a beneficial use, making the necessary allowance for seepage and evaporation.”

In *Bowen v. Spaulding* (Or.), 128 Pac. 37, the court say:

“The drastic remedy of injunction will not be granted to protect water rights unless not only the appropriation by notice but also the actual application of the water to the intended use and the necessity of the use for the purpose in question be clearly shown.”

The Court erred with respect to those provisions of the decree intended to operate upon property and rights, and to regulate the internal affairs, of appellant in a foreign state.

Under this general heading may be grouped for discussion the following assignments of error:

“V.

“The court erred in decreeing that the 12,500

acre feet of the waters of said Salmon River and its tributaries awarded to defendant as a prior right to the rights decreed to plaintiffs, can be used only upon such of the defendant's lands in the State of Nevada, and particularly described in the decree herein, as were reclaimed by defendant and its predecessors in interest prior to the year 1907. (344.)

“VI.

“The court erred in making and entering its decree herein enjoining the defendant from using any part of said 12,500 acre feet of the waters of said Salmon River and its tributaries so decreed to defendant as a prior right, upon the lands of defendant located under the High Line, or Harrell, Canal, and particularly described in Assignment number II. (344.)

“VII.

“The court erred in making and entering its decree herein enjoining the defendant from changing the points of diversion and places of use of the waters of said Salmon River and its tributaries, as authorized by law and particularly as authorized by the laws of the State of Nevada. (344.)

“VIII.

“The court erred in making and entering its decree herein enjoining the defendant from irrigating its lands by means of dams placed in the natural channels of said Salmon River and its tributaries and in the sloughs and other

channels leading therefrom, thereby flooding said lands without the use of artificial canals, ditches and conduits, and in enjoining the defendant from diverting any of the waters of said stream or its tributaries, except by means of ditches or other devices provided with automatic guages. (344-45.)

“IX.

“The court erred in making and entering its decree herein requiring the defendant to install in all of its ditches, canals and conduits, in the State of Nevada, automatic measuring devices for measuring all waters used by the defendant from said streams, in said state, and in decreeing that all such measuring devices and guages shall at all times be subject to the inspection of plaintiffs; and in decreeing that the plaintiffs should have the right to go upon the lands of the defendant in the State of Nevada for the purpose of inspecting the measuring devices installed by defendant in its said ditches, canals and conduits. (345.)

“XI.

“The court erred in making and entering its decree herein retaining jurisdiction in said cause for the purpose of making rules touching the manner of defendant’s diversions, measurements and distribution of the waters of said Salmon River and its tributaries in the State of Nevada; or for the purpose of directing defendant to keep records of the

amounts of water of said streams diverted and used by it in the State of Nevada; or for the purpose of appointing water-masters or commissioners with authority to go upon the said premises of the defendant in the State of Nevada and to distribute to the defendant the waters of said streams to which it is entitled for the irrigation of its lands in said state; or for the purpose of making any order whatever touching the distribution, use, points of diversion or places of use of the waters of said streams by the defendant in connection with the irrigation of its lands in the State of Nevada.” (346.)

By its decree the court in substance provides, (a) that appellant must use the waters constituting its prior right, as recognized by the decree, only upon such lands belonging to the appellant as were irrigated by it prior to 1907 (328-329); (b) that appellant must install in its canals and ditches automatic measuring devices and refrain from the use of any waters for the irrigation of its lands except such as are diverted through canals and ditches provided with such automatic measuring devices; (c) that the measuring devices so provided by appellant shall at all times be subject to the inspection of appellees and that appellees shall have the right perpetually to go upon and over appellant's lands in Nevada for the purpose of inspecting such measuring devices; (d) that the court retain jurisdiction for the purpose of making all reasonable rules touching the manner

of diverting, measuring and distributing the waters belonging to appellant in Nevada, and for directing that appellant "keep accurate and detailed records of the amounts of water diverted and to require reports to be filed from time to time of the amounts so diverted, and generally to make such orders as may be found reasonably necessary to give effect to the decree, and to appoint commissioners or water-masters to make distribution in accordance with its terms."

While it is freely conceded that a court of equity with jurisdiction over the persons of litigants, can, under some conditions, enjoin them from the performance of acts with respect to property outside of the territorial jurisdiction of the court, and can even go so far as to compel a party to perform affirmative acts for the abatement of a nuisance in a foreign state, where the injurious effect of such nuisance operates upon property or rights of one of the parties within the jurisdiction of the court (Salton Sea cases), yet we know of no case in which a court of equity has attempted to give ex-territorial operation to its decree to anything like the same extent as is attempted by the decree now under consideration. Generally speaking, the power to exercise injunctive control of a person with respect to property beyond the territorial jurisdiction of the court must be based upon duties or obligations growing out of trust, contract, or fraud. It is conceived that these furnish a basis for the exercise of control over the conscience of a party. In a few cases, and seemingly *ex neces-*

sitate rei, injunctive relief has been granted in the case of torts committed beyond the jurisdiction of the court. (Rickey Land and Cattle Co. v. Miller and Lux, 152 Fed. 11; Willey v. Decker, 11 Wyo. 496; Howell v. Johnson, 89 Fed. 556; Taylor v. Hulett, 15 Idaho, 255.) The principle of these cases was extended somewhat in the Salton Sea cases so as to compel the performance of such affirmative acts as were necessary (stopping the flow of water) to abate the nuisance complained of. In this decree, however, a more or less elaborate system of regulation and control directly affecting appellant's rights and property in Nevada is provided for. The court was not content to define the rights of appellant and to leave the matter of administration of such rights to the control of the state officials of Nevada, whose duties are imposed by the legislature of that state, but in addition to granting injunctive relief, the court commands the performance of affirmative acts in no wise necessary in order to put an end to the operation in Idaho of any wrongful act of appellant in Nevada, and also attempts to regulate the internal affairs of appellant and to directly affect property and rights whose situs is in the foreign state. The placing of automatic measuring devices in the canals and ditches of appellant is clearly separable from the injunctive relief granted by the decree. It will not be contended that appellant would necessarily have any difficulty in rendering obedience to the injunction without the aid of such appliances. It may be said, indeed, that the use of automatic measuring

devices is exclusively for the purpose of enabling appellees to inform themselves as to whether or not appellant is obeying the injunction. The consequences of the use or non-use of such measuring devices could not possibly be said to operate in the State of Idaho so as to form any analogy to the decisions in the Salton Sea cases. The same thing may be said of the requirement of the decree that the appellant shall keep a record of the measurements of water and furnish the same to appellees. With respect to the attempt of the court to saddle the lands of appellant with an easement in favor of appellees, or to give appellees a perpetual license to go upon and over the lands of appellant in Nevada at their pleasure, there is, we submit, no precedent. Of equal futility are those provisions of the decree whereby the court assumes to retain jurisdiction for the purpose of regulating the appellant's conduct in Nevada and for the purpose, if needs be, of appointing commissioners for the purpose of going into Nevada and of there distributing water to appellant. We are unable to conceive of any basis for the exercise of such a power. Suppose the court should appoint commissioners for the purposes named and that under the court's order such commissioners should proceed into the foreign state and there assume to act under the authority of such order, can it be contended that they would act otherwise than as trespassers? In this connection it should be borne in mind that the State of Nevada by statute has provided for an extensive and elaborate system of water distribution by officers

of its own creation. These officers are clothed with power to regulate head-gates, measuring devices and all other appliances deemed by them to be necessary or convenient in the diversion, distribution and use of water. Is it conceivable that this decree could bar the exercise of these sovereign powers by the State of Nevada?

One of the most onerous and vital provisions of the decree to be discussed under this head is the one that enjoins appellant from using the waters constituting its prior right upon lands other than those mentioned in the decree. Regardless of the question as to whether the court has jurisdiction with respect to this provision of the decree, its action in the premises is obviously erroneous. The question as to where the waters of the State of Nevada may be used is one that must be answered not by what a court in a foreign state may provide, but by what the legislature of the State of Nevada enacts. In the language of Mr. Justice Field in *Pennoyer v. Neff*, 95 U. S., at 722:

“The several states of the Union are not, it is true, in every respect independent, many of the rights and powers which originally belonged to them being now vested in the government created by the Constitution. But, except as restrained and limited by that instrument, they possess and exercise the authority of independent States, and the principles of public law to which we have referred are applicable to them. One of these principles is, that every State possesses exclusive jurisdic-

tion and sovereignty over persons and property within its territory. As a consequence, every State has the power to determine for itself the civil *status* and capacities of its inhabitants; to prescribe the subjects upon which they may contract, the forms and solemnities with which their contracts shall be executed, the rights and obligations arising from them, and the mode in which their validity shall be determined and their obligations enforced; and also to regulate the manner and conditions upon which property situated within such territory, both personal and real, may be acquired, enjoyed, and transferred. The other principle of public law referred to follows from the one mentioned; that is, that no State can exercise direct jurisdiction and authority over persons or property without its territory. Story, *Conf. Laws*, c. 2; Wheat. *Int. Law*, pt. 2, c. 2. The several States are of equal dignity and authority, and the independence of one implies the exclusion of power from all others. And so it is laid down by jurists, as an elementary principle, that the laws of one State have no operation outside of its territory, except so far as is allowed by comity; and that no tribunal established by it can extend its process beyond that territory so as to subject either persons or property to its decisions. 'Any exertion of authority of this sort beyond this limit,' says Story, 'is a

mere nullity, and incapable of binding such persons or property in any other tribunals.' Story, *Confl. Laws*, sect. 539."

The State of Nevada through its legislature has at various times since its organization asserted ownership of all waters within the state and has provided methods not only for the appropriation of such waters, but also for the change of places of diversion, places of use and manner of use. In 1913 a complete codification of laws with reference to the appropriation and use of waters under state control was adopted by the legislature of Nevada. (*Session Laws of Nevada for the year 1913*, pp. 192-220.) Section 1 of the act provides:

"The water of all sources of water supply within the boundaries of the state, whether above or beneath the surface of the ground, belongs to the public."

Section 52 provides:

"There shall be appointed by the state board of irrigation one or more water commissioners for each water district, who shall receive a salary, including all expenses, of not more than five dollars (\$5) per day for each day actually employed on the duties herein mentioned. Such water commissioner shall execute the laws prescribed in sections 53 to 58, inclusive, of this act, under the general direction of the state engineer. * * * "

Sections 53 to 58 provide:

"Sec. 53. The state engineer shall divide the

state into water districts to be so constituted as to insure the best protection for the water user, and the most economical supervision on the part of the state. Said water districts shall not be created until a necessity therefor shall arise and shall be created from time to time as the priorities and claims to the streams of the state shall be determined.

“Sec. 54. It shall be the duty of the state engineer to divide or cause to be divided the waters of the natural streams or other sources of supply in the state, among the several ditches and reservoirs taking water therefrom, according to the rights of each, respectively, in whole or in part, and to shut or fasten, or cause to be shut or fastened, the head-gates or ditches, and to regulate or cause to be regulated, the controlling works of reservoirs, as may be necessary to insure a proper distribution of the waters thereof. Such state engineer shall have authority to regulate the distribution of water among the various users under any partnership ditch or reservoir where rights have been adjudicated in accordance with existing decrees. Whenever, in pursuance of his duties, the water commissioner regulates a head-gate to a ditch or the controlling works of reservoirs, it shall be his duty to attach to such head-gate or controlling works a written notice properly dated and signed, setting forth the fact that such head-gate or con-

trolling works has been properly regulated and is wholly under his control, and such notice shall be a legal notice to all parties interested in the diversion and distribution of the water of such ditch or reservoir. It shall be the duty of the district attorney to appear for or in behalf of the state engineer or his duly authorized assistants in any case which may arise in the pursuance of the official duties of any such officer within the jurisdiction of said district attorney.

“Sec. 55. Any person who shall wilfully open, close, change or interfere with any lawfully established head-gate or water-box without authority, or who shall wilfully use water or conduct water into or through his ditch which has been lawfully denied him by the state engineer, his assistants or water commissioners, shall be deemed guilty of a misdemeanor.

“The possession or use of water when the same shall have been lawfully denied by the state engineer or other competent authority shall be *prima facie* evidence of the guilt of the person using it.

“Sec. 56. The owner or owners of any ditch or canal shall maintain to the satisfaction of the state engineer of the division in which the irrigation works are located, a substantial head-gate at or near the point where the water is diverted, which shall be of such construction that it can be locked and kept closed by the

water commissioner; and such owners shall construct and maintain, when required by the state engineer, suitable measuring devices at such points along such ditch as may be necessary for the purpose of assisting the water commissioner in determining the amount of water that is to be diverted into said ditch from the stream, or taken from it by the various users. Any and every owner or manager of a reservoir located across or upon the bed of a natural stream or of a reservoir which requires the use of a natural stream channel, shall be required to construct and maintain, when required by the state engineer, a measuring device of a plan to be approved by the state engineer, below such reservoir, and a measuring device above such reservoir, on each or every stream or source of supply discharging into such reservoir, for the purpose of assisting the state engineer or water commissioners in determining the amount of water to which appropriators are entitled and thereafter diverting it for such appropriators' use. When it may be necessary for the protection of other water users, the state engineer may require flumes to be installed along the line of any ditch. If any such owner or owners of irrigation works shall refuse or neglect to construct and put in such head-gates, flumes, or measuring devices after ten (10) days' notice, the state engineer may close such ditch, and

the same shall not be opened or any water diverted from the source of supply, under the penalties prescribed by law for the opening of head-gates lawfully closed until the requirements of the state engineer as to such head-gate, flume, or measuring device have been complied with, and if any owner or manager of a reservoir located across the bed of a natural stream, or of a reservoir which requires the use of a natural stream channel, shall neglect or refuse to put in such measuring device after ten (10) days' notice by the state engineer, such state engineer may open the sluice-gate or outlet of such reservoir and the same shall not be closed under the penalties of the law for changing or interfering with head-gates, until the requirements of the state engineer as to such measuring devices are complied with.

“Sec. 57. The state engineer or his assistants shall have power to arrest any person violating any of the provisions of this act, and to turn them over to the sheriff, or other competent police officer within the county, and immediately on delivering any such person so arrested into the custody of the sheriff, it shall be the duty of said state engineer, or his assistant making such arrest, to immediately, in writing, and upon oath, make complaint before the justice of the peace against the person so arrested.

“Sec. 58. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum not less than twenty-five dollars (\$25), nor more than two hundred and fifty dollars (\$250), together with the costs, or imprisoned in the county jail not exceeding six months, and not less than ten (10) days, or by both such fine and imprisonment.”

In section 59 there are the following provisions:

“Any person desiring to appropriate any of the public waters, or to change the place of diversion, manner of use or place of use of water already appropriated, shall, before performing any work in connection with such appropriation, change in place of diversion, or change in manner of use or place of use, make an application to the state engineer for a permit to make the same. * * * Every application for permit to change the place of diversion, manner of use or place of use of water already appropriated, shall contain such information as may be necessary to a full understanding of the proposed change, as may be required by the state engineer. All applications for permit shall be accompanied or followed by such maps and drawings and such other data as may hereafter be prescribed by the state engineer, and such accompanying data shall be considered as part of the application.”

In section 63 it is provided that:

“It shall be the duty of the state engineer to approve all applications made in proper form where all fees, as in this act provided, have been paid, which contemplate the application of water to beneficial use, and where the proposed use or change does not tend to impair the value of existing rights, or be otherwise detrimental to the public welfare.”

The act contains 90 sections in all and constitutes the present law of Nevada, except as amended in certain minor particulars by the legislature of 1915. Thus the State of Nevada has in the first place conferred upon appellant the right to change the place of diversion, place of use, or manner of use of its waters within that state. The court, on the other hand, by its decree has absolutely foreclosed appellant from exercising this right. The conflict between the court's decree and the laws of Nevada in this and other particulars to which reference has been made, is palpable and direct, and either the one or the other must yield.

The decree prohibits the appellant from irrigating other lands even although such irrigation would not result in any increased consumption of water. Right alongside of the lands that were irrigated prior to 1907 there are areas better adapted for cultivation than are some of the lands upon which the court says the water may be used. Nevertheless the appellant may not change the place of use so as to bring these other lands under cultivation, even al-

though it might be no disadvantage to appellees, to do so. Indeed, it might well be that with the water that is required to flood certain of the meadow-lands upon which crops of comparatively small value are produced, a much larger area of lands with better soil and better conditions generally, might be brought under cultivation and caused to produce more valuable crops without the consumption of any more water.

The decree ignores the well recognized right of an owner of water to increase the effectiveness of its use. (Rogers v. Pitt, 129 Fed. 932; I Wiel, Sec. 483.) The court has allowed appellant a much smaller quantity of water than has been used by it and its predecessors in interest in flooding the meadow-lands. It appears conclusively from the testimony, however, that this method is the only one that can be successfully employed for the irrigation of such crops as are produced on the bottom lands. Appellant, therefore, is in this situation: It can no longer irrigate the meadow-lands so as to produce ordinary crops of wild hay and pasturage, because of the insufficiency of the water awarded to it by the decree; it cannot resort to the alternative of using this smaller quantity of water upon the higher lands where the soil is better and where more valuable crops can be produced, because the decree perpetually enjoins appellants from doing this. It was ~~the~~^{the} anticipation of the possibility of being confronted by this dilemma that prompted defendant on the trial to undertake to show that the evaporation and consequent loss of water resulting from the old methods

of irrigation would be much greater than from the use of a like quantity of water on lands under the High Line Canal.

But the court of its own motion (119-122) excluded evidence offered for that purpose. This ruling of the court is complained of in appellant's fifteenth assignment of error. (351-357.) It should be noted also that the court in its written decision (321) invited a further showing concerning the use of water under appellant's old rights upon lands under the High Line Canal, and yet when defendant requested permission to introduce further evidence concerning this matter, the request was denied. (264.) So that the court by its decree has not only deprived appellant of the greater portion of the water it is entitled to as a prior right, but by restricting appellant in the use of the residue to the lower lands along the channel, the value of that residue has been appreciably diminished. It is a matter of common knowledge that appellant would be able to produce crops of a much higher value if it were permitted, for instance, to use the water under its prior right for the irrigation of the alfalfa lands under the High Line Canal. As has already been pointed out, the court refused to recognize appellant's claim to a prior water right for the lands under the High Line Canal, and this, in connection with the provisions of the decree now under discussion, necessarily has the effect of completely wiping out appellant's investment in the purchase, clearing, tilling and planting of approximately 4,500 acres of land and

in the construction of over eight miles of canal, besides numerous and extensive laterals. It is precisely for the purpose of meeting the requirements of such a situation as this that the laws of Nevada with reference to the change of the place of use have been enacted. But it is suggested by the court in its written decision that if appellant should use the water awarded to it as a prior right for the purpose of irrigating the lands under the High Line Canal, such action would result in a somewhat greater net loss than if used upon the bottom lands adjacent to the channel. This conclusion, as we understand it, is based exclusively upon information derived from the Herrington Report. It is true that the author of the report states some conclusions tending to support the court's view, but a careful analysis of the investigations that were actually made by Mr. Herrington will disclose that the conclusions referred to are not supported by the facts. For instance, in Table No. 4 of the report it will be seen that the author reached the conclusion that there was a net loss during the period covered by the investigations (May 16 to September 20, 1914,) of 9,580 acre feet. In Table No. 3 there is an apparent showing that the total diversions under the High Line Canal amounted to 7,034 acre feet; that the total return was 500 acre feet, leaving a net loss under that canal of 6,534 acre feet. These tables, however, must be considered in the light of the facts connected with the various measurements tabulated. In the first place, it must be borne in mind that a substantial portion of the re-

turn water was not susceptible of measurement. The only return water that was susceptible of measurement was that which came into the channel in streams of sufficient size to be measured by means of a water meter. The quantity of all other visible return water throughout the entire distance from the Bird's Nest to the Bore's Nest on the San Jacinto Ranch, as well as on the Vineyard Ranch, was arrived at by the roughest kind of an estimate. An attempt was made to ascertain the total net loss by comparing the total flow of the stream above all points of diversion with that shown at the guaging station located below the irrigated lands. It is clear, however, that such measurements do not meet the requirements of the case because of the admitted fact that a substantial quantity of water passed the guaging station below the lands in the sub-flow of the stream and, therefore, was not taken into account. As was explained by Engineer Jenson (234-235) the guaging station below the lands is at a place where there is a bed of gravel approximately 150 feet wide and at least six feet deep. The sub-flow of the stream through this gravel is of course not measured. But where the channel is cut through lava rock below this point, all of the water comes to the surface and flows into the reservoir. To arrive at the result shown by the tables referred to, it is assumed that the return water from all of the ditches, with the exception of that from the High Line Canal, was actually measured or at least was estimated with approximate accuracy. The impossibility of such

result is apparent when it is considered that the water diverted through the several canals on each side of the channel returns in large and small streams and by underground seepage all the way from the upper end of the Vineyard Ranch to the Bore's Nest. Many of the streams and seeps are of course too small for measurement or even of estimation. At page 15 of the report the author says: "By return water is meant only that part of the water diverted which returned to the main stream on the surface of the ground." So that the 500 acre feet referred to as return water from the High Line Canal is only that part of the return water from that source that flowed back into the channel over the surface. Considering the contour of the surface of the lands under the High Line Canal and the character of the soil and sub-soil, it is evident that all but an insignificant portion of the return flow would be by seepage and percolation. We think there is no testimony in the record from which it can be logically inferred that there is proportionately any less return water from the lands under the High Line Canal than from the meadow-lands. On page 19 of the report it appears that the only measurement that was ever made of the surface return water from the High Line Canal was on July 13. Finally, on page 30, the author says: "The proportion of water leaving the grain fields that actually reached Salmon Falls Creek can only be surmised, although unquestionably a large part returned as seepage." Furthermore, the physical conditions as testified to by Mr. Jenson (201-203)

are such as to rebut any inference that any of the percolating waters in the lands under the High Line Canal could possibly fail to return to the channel. The surface soil is loose and under that is a layer of coarse gravel resting upon a comparatively impervious stratum that dips rapidly in the direction of the bottom lands. Water percolates through this material at the rate of about 145 feet per day. (203.) At the time Herrington made the measurement of the return flow (July 13), the underlying strata had not become thoroughly saturated. Indeed it could hardly be expected that this mass would become fully soaked with water before the end of that season. After the soil became once saturated the percolating water would thereafter flow back into the channel as a matter of course. It is not contended that the lands in question are located in a different drainage area, nor that there would be any loss resulting from the irrigation of the same, except such as would be caused by evaporation and consumed by plant growth.

Thus far we have not referred to the principle announced in the case of *Kansas v. Colorado*, 206 U. S. 117, where it is said:

“Summing up our conclusions, we are of the opinion that the contention of Colorado of two streams cannot be sustained; that the appropriation of the waters of the Arkansas by Colorado, for purposes of irrigation, has diminished the flow of water into the State of Kansas; that the result of that appropriation

has been the reclamation of large areas in Colorado, transforming thousands of acres into fertile fields and rendering possible their occupation and cultivation when otherwise they would have continued barren and unoccupied; that while the influence of such diminution has been of perceptible injury to portions of the Arkansas Valley in Kansas, particularly those portions closest to the Colorado line, yet to the great body of the valley it has worked little, if any, detriment, and regarding the interests of both States and the right of each to receive benefit through irrigation and in any other manner from the waters of this stream, we are not satisfied that Kansas has made out a case entitling it to a decree. At the same time it is obvious that if the depletion of the waters of the river by Colorado continues to increase there will come a time when Kansas may justly say that there is no longer an equitable division of benefits and may rightfully call for relief against the action of Colorado, its corporations and citizens in appropriating the waters of the Arkansas for irrigation purposes."

The principle laid down by the court in the above quotation from the opinion is a recognition of the only principle that in the final analysis can be adopted as a solution of some of the problems that arise out of conflicting assertions of sovereign power by the states through which interstate waters flow.

The case at bar furnishes a striking example of such a conflict. It is admitted that Nevada furnishes practically all of the watershed for Salmon River and its tributaries. About the only benefit that the State of Nevada can derive from the use of these waters is that which will follow from the irrigation of the lands in question by the defendant. According to the records kept by plaintiffs for the years 1911 to 1914, inclusive, the average annual discharge into plaintiffs' reservoir has been 130,600 acre feet. (68.) The State of Nevada, through the defendant, lays claim to a little over 50,000 acre feet. This can be used by the defendant and again restored to the stream with comparatively little loss.

Respectfully submitted,

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United States
Circuit Court of Appeals
For the Ninth Circuit

VINEYARD LAND & STOCK COMPANY, a Corporation, *Appellant,*

VS.

TWIN FALLS SALMON RIVER LAND & WATER COMPANY, a Corporation, and SALMON RIVER CANAL COMPANY, LIMITED, a Corporation, *Appellees.*

Brief of Appellees

*Upon Appeal from the United States District Court
for the District of Idaho, Southern Division.*

RICHARDS & HAGA, and
J. L. EBERLE,
Solicitors for Appellees.

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STATEMENT OF THE CASE.

The facts are stated with reasonable fullness in the brief of Appellant, and we shall do no more than direct attention to such matters as may serve to make clear the argument that follows:

The Issues.

Briefly stated, the case is one to determine the relative rights and priorities of the respective parties

to the use of the water of Salmon River, sometimes known as Salmon Creek.

Plaintiffs' Claims.

For convenience, we shall throughout the brief refer to the parties by the designation by which they were known in the trial Court, viz: Appellees will be referred to as "Plaintiffs," and Appellant will be referred to as "Defendant."

Plaintiffs claim under three water permits issued by the State Engineer of the State of Idaho. The validity of the permits is not questioned. They are for the following amounts and with the following priorities, to-wit:

- (1) Permit No. 2659, for 1500 cubic feet per second, with a priority as of December 29, 1906.
 - (2) Permit No. 3267, for 500 cubic feet per second, with a priority as of August 22, 1907.
 - (3) Permit No. 5519, for 1000 cubic feet per second, with a priority as of September 7, 1909.
- (Record, pp. 270-284.)

The date of Plaintiffs' priorities or rights is therefore definitely fixed by the permits above referred to, and there is no controversy as to the date Plaintiffs' water rights were initiated. The works described in the permits have been fully completed and Certificates of Completion of Works have been issued by the State Engineer of the State of Idaho, as required by law. (Record, pp. 274 and 279.)

Plaintiffs' irrigation system was constructed under the Act of Congress commonly known as the

Carey Act and the laws of the State of Idaho passed in furtherance of the said Act of Congress, under a plan by which it was proposed to reclaim from such irrigation system approximately 150,000 acres; but as shown by the record, because of later information showing a limited water supply the system was reduced during construction so as to reclaim only approximately 100,000 acres, and water rights in the system were actually sold to only about 73,000 acres. Under the laws of Idaho, Plaintiffs, or the settlers who purchased the water rights, have ten years from the completion of the works in which to apply water to beneficial use. (Ses. Laws 1915, p. 216.)

Defendant's Claims.

The Defendant in its Amended Answer and Counter-claim (Record, pp. 34-51) pleaded no specific right, either as to date of priority or as to any particular ditch, or as to any particularly described lands, with the possible exception of what is known in the record as the Harrell, High Line, or Big Ditch, and as to that ditch both the priority of the right and the quantity claimed were indefinite and the lands were alleged as "located in more or less irregular shape in Townships 46 and 47 North, of Range 64 E. M. D. M., and in Townships 46 and 47 North of Range 65 E. M. D. M., in said Elko County, Nevada." As to other lands and rights, the defendant pleaded generally as follows (Par. 19, p. 45):

"That along and upon said Salmon River and its tributaries, and within the watersheds of

such river, mostly in said Elko County, Nevada, and in irregular bodies, from the bulk of the land hereinbefore set forth, this defendant owns, and its predecessors owned for many years prior to the year 1906, and prior to the time of the alleged appropriation of the plaintiffs, about 18,000 acres of grazing and irrigable lands, susceptible to cultivation and the production of crops, wild and tame grasses, to-wit, about 13,500 acres thereof being immediately along and upon said river and its said tributaries and in Townships 43, 44 and 45 North of Range 63 E. M. D. M., in Townships 43, 44, 45, 46 and 47 North of Range 64 E. M. D. M., and Townships 43, 44, 45 and 47 North of Range 65 E. M. D. M., in the State of Nevada, and in Township 16 South of Range 17 East, B. M., in Twin Falls County, Idaho, and situate upon, along and adjacent to what are known as Nall, Jakes, Willow Springs, Warm Springs, Trout and Shoshone Creeks, and branches thereof, respectively, and said Salmon River."

It was then alleged that part of said lands had been irrigated by flooding and by sub-irrigation from the natural flow of the stream and part from dams and ditches and other means of "spreading, flooding and otherwise utilizing water upon said lands, and the remainder thereof by dams and ditches, wholly diverting the water of said stream to and upon such respective lands."

The testimony of defendant as to the lands actually irrigated by means of irrigation works and structures was equally indefinite and general.

Rights as Fixed by the Decree.

The decision of the Court is a remarkably accurate condensation of the evidence, and it gives a comprehensive view of the conditions existing under the projects of both the Plaintiffs and Defendant. The Court finds that it is unnecessary to determine the exact priority of the different ditches by which the Defendant is entitled to divert water from Salmon River, and that it is sufficient that it determines that the prior rights of defendant aggregate 12,500 acre feet. It also found that as to what is known as the Big Ditch, sometimes called the Harrell or High Line Canal, the work of construction had not been prosecuted with such diligence as to entitle the Defendant to the benefit of the doctrine of relation, and Defendant's water right, based on the extension of that ditch, the Court decreed to be subsequent to Plaintiff's rights. The Court therefore awarded Defendant a priority of 12,500 acre feet for certain lands which are described with some degree of accuracy in the decree. It then gave Plaintiffs 235,000 acre feet under their permits for the lands situated under their project, and then awarded the Defendant the third priority of 12,000 acre feet for the extension of the High Line or Harrell Canal, and the decree described with reasonable accuracy the lands to which such water may be applied. The description in the decree

of defendant's lands entitled to water is far more definite and specific than the description pleaded by the defendant in its answer and counter-claim.

The Court concluded its decision with this direction to Counsel (Record, p. 321) :

“Counsel for the Plaintiffs are directed to prepare a draft of decree and submit the same to opposing counsel before offering it for signature.”

It will not be denied that this was done; neither will it be denied that the defendant declined to submit any suggestions, either as to the description of the lands to be included in the decree, or as to any other matter of which its counsel now complain.

ARGUMENT.

Plaintiffs' rights were initiated on December 29, 1906, at which time their predecessors in interest appropriated 1500 cubic feet per second for the irrigation of the lands lying under Plaintiffs' irrigation system. The rights of the parties must be determined as of that date; that is to say, any enlargements, extensions, or new construction made by the Defendant after Plaintiffs' rights were initiated must be included in the rights which have a subsequent priority to that held by Plaintiffs. An examination of the record will show that Defendant attempted to prove the conditions as they existed at the time of the trial, and the lands that were then being irrigated, instead of confining itself to the conditions

existing at the time Plaintiffs' rights were initiated.

The Supreme Court of Nevada, in Proctor vs. Jennings, 6 Nev. 83, said:

"Priority of appropriation, where no other title exists, undoubtedly gives the better right. And the rights of all subsequent appropriators are subject to his who is first in time. But others coming on the stream subsequently may appropriate and acquire a right to the surplus or residuum, so the rights of each successive person appropriating water from a stream are subordinate to all those previously acquired, and the rights of each are to be determined by the condition of things at the time he makes his appropriation. *So far is this rule carried that those who were prior to him can in no way change or extend their use to his prejudice, but are limited to the rights enjoyed by them when he secured his.*" (Our italics.)

It is unnecessary to extend the citation of authorities on this subject. This is the law in the arid States, but as Defendant in this case rests its rights upon the laws of Nevada, it is sufficient to refer to the decision of the highest Court of that State on the subject.

It is conceded that Defendant's lands are what are generally known as mountain meadows, that is to say, they are natural meadows situated near the summit of the range; in this case, at an altitude of from 5400 to 5600 feet above sea level. A "meadow" is

defined in Webster's New International Dictionary as follows:

"1. Grass land, esp. a field on which grass is grown for hay, often a tract of low or level land producing grass which is mown for hay.

"2. Low land covered with coarse grass or rank herbage near rivers and in marshy places by the sea."

It is clear that a large part of these lands were never arid in the strict or true sense; only part of them were ever covered with sagebrush, and most of them were natural meadows, and on that account were originally sought by stockmen looking for native pasture, and this explains why the lands here in question have been claimed and held by different "cow outfits" since about 1871. The best description of the land before any artificial works had been constructed by man is given by the witness J. E. Bowers (Record, pp. 261-262), who testified as follows:

"I have known the Salmon River since 1873. When I first saw it it was meadow land, grass land and willows, pretty much the same as it is now. I worked there until the fall of 1876 (meaning 1896) and have been through there off and on until 1903. I worked there as general manager of the outfit pretty nearly five years, until the winter of 1896. I hadn't been back there for eighteen years until last Sunday when I went up the valley and back again. There was no grain raised during my time on the Sal-

mon River. The strip of meadow land along the river when I first saw it would vary in width. It wasn't all solid meadow. The points would run down in it with brush or grease-wood, but I should judge the whole valley for fourteen miles from Bird's Nest to the mouth of Bore's Nest would average in the neighborhood of half a mile wide. This would be in 1893, '94, '95 and '96. In 1873 the conditions were a good deal the same, only the grass land was probably widened out by irrigation afterwards. Jasper Harrell was the owner in 1873. He brought some cattle in there and wintered them in the valley. I think he had come in from California two years before that with a bunch of cattle. There were some beaver dams in the river. Quite a few opposite the Bird's Nest and some in the upper end of the Vineyard field at the mouth of the canyon. The dams caused the water to spread out. The Salmon River for a good many years naturally flooded out and covered a good deal of this meadow land from overflowing, especially if there was a big run-off in May and the fore part of June."

The lands were valued in those early days because of the natural meadows and the pasture which they afforded during the winter. They certainly had no other advantages, for they are situated in a country with a cold and inhospitable climate, where frost may be expected nearly every month in the year and where no attempt has been made to raise grain until

the last few years. If it had not been for the grasses naturally growing thereon, the cattlemen would not have passed by the large and more accessible sagebrush plains with vastly more congenial climate.

The General Superintendent of the Defendant said (Record, p. 244) :

“We didn’t raise anything but hay in 1910. We did clear a little brush below the lane for grain. In 1911 we sowed about twenty acres of grain there.”

And Mr. Bower, a former Superintendent, said (p. 262) : “There was no grain raised during my time on the Salmon River.” Hugh McGuire, who had been connected with the Defendant’s enterprise for several years, referring to the small piece of alfalfa which was the only tame grass or crop on the place, said (p. 165) :

“I think we commenced to irrigate the alfalfa about May; sometimes the frost set the alfalfa back. I have seen frost in the Salmon River country in June. It begins about September. I think on one occasion we had frost in July. At that time we had a snow storm in the whole country. I have seen snow in the latter part of September. A little garden was raised, and a few potatoes; not enough for the ranch.”

In determining the amount of water to be allotted to Defendant the Court did, and necessarily should, take into consideration the natural conditions of the land, the annual rainfall, the altitude, its adapta-

bility to crops requiring a large amount of water, and the fact that natural meadow grasses grow on these lands without irrigation. We are not unmindful of the fact that several small tracts of bench land, originally covered with sagebrush, have been cleared and irrigated and Defendant has in that way added to the acreage included in the native meadows, and that between the sloughs or draws covered with natural meadow grasses and naturally flooded or sub-irrigated there are higher bars or stretches of land containing little or no pasture in their natural condition. Some of these tracts have lately been irrigated by ditches or large dams, while others, according to the great preponderance of the evidence in the record, have not been reclaimed but are substantially in the same condition today that they were forty years ago; and although it may appear from the maps that all lands between the ditches and the channel of the river have been reclaimed, or can be irrigated from such ditches, such, in fact, is not the case. While no contour survey of the land between the ditches and the river has ever been made, the witnesses for Plaintiffs had made a thorough investigation of all of these lands for the sole purpose of determining what lands had been irrigated, and they testified that there were large tracts of unirrigated sagebrush land between the ditches shown on Defendant's maps and the channel of the river.

We pass now to a consideration of the duty of water and the principles that should be observed in determining that question.

DUTY OF WATER.

In the State of Nevada beneficial use is the measure and the limit of the right, and the highest economic duty is demanded of water users.

The State of Nevada has from the beginning demanded that water users should at least approach the highest economic duty of water in their farm operations. It is apparent from the decisions of its Courts that the development of the State depends largely on the available water being economically applied.

The Supreme Court, in Barnes vs. Sabron, 10 Nev. 217, said:

“In a dry and arid country like Nevada, where the rains are insufficient to moisten the earth and irrigation becomes necessary for the successful raising of crops, the rights of prior appropriators must be confined to a reasonable and necessary use. The agricultural resources of the State cannot be developed and our valley lands cannot be cultivated without the use of water from the streams to cause the earth to bring forth its precious fruits. No person can by virtue of a prior appropriation claim or hold any more water than is necessary for the purpose of the appropriation. Reason is the life of the law, and it would be unreasonable and unjust for any person to appropriate all the waters of a creek when it was not necessary to use the same for the purposes of his appropriation. * * *

It must be exercised with reference to the gen-

eral condition of the country and the necessities of the people, and not so as to deprive a whole neighborhood or community of its use and vest an absolute monopoly in a single individual.

* * * *

“We think the rule is well settled, upon reason and authority, that if the first appropriator only appropriates a part of the waters of a stream for a certain period of time, any other person or persons may not only appropriate a part or the whole of the residue and acquire a right thereto as perfect as the first appropriator, but may also acquire a right to the quantity of water used by the first appropriator at such times as not needed or used by him. In other words, if plaintiff only appropriated the water during certain days in a week, or during a certain number of days in a month, then the Defendants would be entitled to its use in the other days of the week or the other days of the month.”

The Court then discusses the delivery or use of water by periods and the right to confine the appropriator to the period that he has been accustomed to use the water, and adds:

“It was the duty of the defendants every fifteen days or thereabouts, as plaintiff might need the water, to turn down a sufficient quantity within plaintiff’s appropriation required to irrigate his lands, provided always, that he was not by other means supplied with sufficient water for that purpose. * * * *”

In *Dick v. Caldwell*, 14 Nev. 167, the Court said:

“He did not appropriate in a legal sense any water except such as he used beneficially. Turning water out of the stream for no useful purpose did not give him any additional rights. If he had from 1869 to and including 1875 turned 207 inches of water from the stream and made no use of any portion of it, it cannot be claimed that he would have been entitled to a decree for any amount by reason of actual appropriation. Turning more water from the stream than he used was *waste*, not appropriation.”

In *Roeder v. Stein*, 42 Pac. 867, 868, the Supreme Court of Nevada said:

“Possibly the appellant’s counsel is of the belief that the plaintiff, having made the first appropriation, is entitled to have the water come down to him to the extent of his appropriation, whether he has use for it or not. If so, he is mistaken. Water is too precious in this arid climate to permit its being unnecessarily wasted. * * * But, whatever he may be irrigating, he is only entitled to the amount he needs, economically and reasonably used, and when he has that he cannot prevent others from using the surplus. * * * Nor do we think that there was any error in requiring the plaintiff to use the water in a particular manner hereafter.”

In *Gotelli et al. vs. Cardelli et al.*, 69 Pac. 8, the Court said:

“The law is that an appropriator is only entitled to so much water, economically used, within his appropriation, as is necessary to irrigate his land. The necessary amount of water varies with the seasons.”

The Federal Court, for the District of Nevada, in *Union Mill & Min. Co. vs. Dangburg*, 81 Fed. 73, said:

“Waste in the use of water is not permissible. To secure protection in the diversion and use of the waters of a stream for irrigation or any other purpose, there must be an economic, beneficial and reasonable use thereof so as to prevent waste. An excessive diversion of water for any purpose cannot be regarded as a diversion for a beneficial use. * * *

“The true test of the extent of an appropriator’s right to the waters of a stream is the actual amount that is applied without waste to some beneficial use within a reasonable time after he has given notice of his intention to appropriate the water.

“An appropriator of the waters of a stream is required to make an economic use of the water appropriated for the purpose of the appropriation and if the capacity of his ditches is greater than is necessary to provide for such use, he should be confined to the amount necessary for such economic use though less than the capacity of his ditches.”

In 1889 the Legislature of the State of Nevada passed an Act providing:

“Any person or persons who shall during the irrigating season divert and conduct the water or portion thereof of any river, creek or stream into any slough or sloughs, dam or dams, pond or ponds and retain or cause the same to be held or retained therein without making any other use of such water, or who shall during the irrigating season divert and conduct the water or a portion thereof away from any such river, creek or stream and run or cause or allow the same to run to waste on sagebrush or greasewood land, such diversion shall be deemed an unlawful use and waste of water.”

Sections 4674 and 4675 of the compiled statutes of 1911 provide as follows:

“Section 4674: There is no absolute property in the waters of a natural water course or a natural lake. No right can be acquired to such waters, except a usufructuary right, the right to use it or dispose of its use for a beneficial purpose. When the necessity for the use of water does not exist, the right to divert it ceases and no person shall be permitted to divert or use the waters of a natural water course or lake except at such times as the water is required for a beneficial purpose.”

“Section 4675: No person shall be permitted to divert or use any more of the waters of a na-

tural water course or natural lake than sufficient when properly and economically used to answer the purpose for which the diversion is made, nor shall any person be permitted to waste any such water, and all surface water remaining after use, unavoidable wastage excepted, shall be returned to the channel by the persons diverting the same without unreasonable delay or detention."

By Section 4676 of the Compiled Statutes it is provided that the maximum quantity of water which may be appropriated where water cannot be beneficially used for more than six months is three acre feet. In some parts of the State it is provided that three acre feet is the maximum for five months, and one-half an acre foot may be added for each additional month that the irrigation season exceeds five months.

Section 11 of the new General Act relating to water rights, passed in 1913, provides as follows as to the maximum amount of water that may be appropriated for irrigation purposes (1913 Laws, Sec. 11, page 194) :

"The maximum quantity of water which may hereafter be appropriated in this State for irrigation purposes shall be as follows: Where the water is diverted for direct irrigation, not to exceed one one-hundredth of one cubic foot per second for each acre of land irrigated; the measurement to be taken where the main ditch

enters or becomes adjacent to the land to be irrigated; due allowance for losses to be made by the State Engineer in permitting additional water to be diverted into said ditch. Where water is stored, not to exceed four acre feet for each acre of land to be supplied; that is, four acre feet per acre stored in the reservoir, the losses of evaporation and transmission would be borne by the appropriator."

In view of the fact that substantially all of Defendant's lands are situated in the State of Nevada, it would seem unnecessary to cite authorities outside of that State on the question of the duty of water, except, possibly, in the State of Idaho, in which all of Plaintiffs' lands are situated, and a small part of Defendant's lands; and from the decisions in that State it appears that the two States are in perfect accord in demanding of water users the highest economic duty in the use of water.

The Supreme Court of Idaho, in *Farmers Co-operative Ditch Company vs. Riverside Irrigation District et al.*, 16 Idaho 525, 102 Pac. 481, said:

"It is the policy of the laws of this State, and it has been so declared from time to time by this Court, to require the highest and greatest possible duty from the water of the State in the interest of agriculture and other useful and beneficial purposes. * * *

"The law only allows the appropriator the amount *actually* necessary for the useful or

beneficial purpose to which he applies it. The inquiry was therefore not what he had used, but how much was actually necessary. * * *'

" 'In this arid country the largest duty and the greatest use must be had from every inch of water in the interest of agriculture and home building.'

"After a somewhat extended and very careful examination of the record in this case, we are convinced that justice demands, and the record justifies, the granting of a new trial to the extent and for the purpose of determining the question as to the duty of water on the two classes of lands mentioned in this decree. *For this purpose the Court can hear the evidence of persons who are competent to testify on the subject and who can do so, not from guess work or hearsay, but from actual measurements and tests and applications of the water to the lands irrigated under these appropriations.* A new trial for this purpose can do no harm or injustice to anyone, and, on the other hand, if it should be found that even a very slight increase in the duty of water per acre can be had, it will, in the aggregate, amount to several thousand additional acres of land that may be irrigated.

"*In determining the duty of water, reference should always be had to lands that have been prepared and reduced to a reasonably good condition for irrigation. Economy must be required and demanded in the use and application of wa-*

ter. Water users should not be allowed an excessive quantity of water to compensate for and counterbalance their negligence or indolence in the preparation of their lands for the successful and economical application of water. One farmer, although he has a superior water right, should not be allowed to waste enough water in the irrigation of his land to supply both him and his neighbor, simply because his land is inadequately prepared for the economical application of water.” (Our italics.)

The case last above cited covers also the rights of a water user to continue a wasteful method of irrigation such as is used by the Defendant. The trial Court very properly held that turning water into the sagebrush without any systematic application of the water to the land, but with the sole expectation of stimulating in a slight degree the growing of natural grasses, was not the application of water to beneficial use within the meaning of the term “beneficial use” as that expression is employed in the Constitutions and Statutes of the arid States or the decisions of the Courts.

The Supreme Court of Nevada has conclusively settled that matter, so far as this case is concerned, by its decision in the case of Walsh v. Wallace, 26 Nev. 299, 67 Pac. 914. The Court there said:

“Cutting wild grass produced by the overflow of the river, or, as expressed by the witnesses, by the water of Reese River coming down and

spreading over the land, was not an appropriation of that water, within the meaning of that term. Neither was the grazing of the land an appropriation of the water, under the facts."

If dams may be placed in a stream to raise the water above the banks and thus overflow the bottom lands, then all water laws and decisions of Courts may be set at nought, for manifestly no system of measurement can be installed in such cases, and no duty of water can be established where such methods are employed. Such use of the water hardly comes within the term "irrigation."

The Defendants have no vested right to continue the wasteful methods which they have employed in the past of damming the river and diverting the water into sloughs or low places where it is allowed to run continuously.

The Supreme Court of Oregon, in considering this identical question in *Hough v. Porter*, 52 Ore. . . , 98 Pac. 1083, 1102, said:

"In this arid country such manner of use must necessarily be adopted as will insure the greatest duty possible for the quantity available. (Citing cases.) The wasteful method so common with early settlers can, under the light most favorable to their system of use, be deemed only a privilege permitted merely because it could be exercised without substantial injury to anyone; and no right to such methods of use was acquired thereby.

“Owing to the little demand and large proportionate supply in use by those along Silver Creek and its branches in the early eighties, together with the lack of general knowledge and experience on the subject throughout the State, wasteful methods at that time were, no doubt, common; but of recent years improved means throughout the west have come into use, and a scarcity of the supply has made a more economic use necessary. The result is that the law has become well settled that beneficial use and needs of the appropriator, and not the capacity of the ditches or quantity first applied, is the measure and limit of the right of such appropriators.”

The trial Court, from our viewpoint, went to the very limit in fixing a low duty of water, that is, in giving the Defendant a large amount of water for the small acreage on which Defendant had actually applied water to beneficial use. We think it is clear from the evidence that Defendant cannot beneficially apply three acre feet of water per acre on any of the bottom lands or natural meadow lands that it claims to have flooded or irrigated in the past. Courts, in determining the duty of water for irrigation, do not seek the point of “diminishing returns.” No water suit has ever been determined on the basis of awarding to the claimant the *maximum* amount that can be applied to beneficial use, or the amount that can be used without decreasing the yield. Such a rule would wholly ignore the interest of the State and the

public and would not involve in any sense economic duty.

Plaintiffs' Exhibit No. 31 (Record, p. 286) shows the result at the Gooding Experiment Station at Gooding, Idaho, undoubtedly the nearest State or Government Experiment Station to these lands. Six plats were used, and various amounts of water were applied to the different plats. The amount of moisture in the soil at the beginning of the irrigation season and the amount at the close of the season are given, together with the yield per acre and the yield per acre foot of water.

Don Bark, a witness for Defendant, had participated in these experiments, and the bulletin had his approval. It appears from the bulletin that on plat 3 the percent of moisture in the ground at the beginning of the season was 17 (undoubtedly excessive in view of the amount of moisture in the adjacent plat); that by the application of 1.95 acre feet the percent of moisture at the close of the season was 15%. That in plat 4 the percent of moisture at the beginning of the season was 13.74 per cent; that by the application of 2.6 acre feet there remained in the soil at the end of the season 17.12%, an increase of 3.38%. That in plat 5, by applying less than three acre feet during the season the percent of moisture increased from 13.39 to 16.92, over $3\frac{1}{2}\%$, thus showing conclusively that the continuous application of that amount of water would eventually waterlog the land. In other words, the amount of water applied was excessive, when considered in connection with the continuous use of the land.

These experiments were made in a section where the land is truly arid, and where no one would question but what more water would be required than on the lands of the Defendant. This table shows clearly that while for one or two seasons a large amount of water may produce slightly larger returns than a smaller amount, at the same time the land is gradually becoming waterlogged and ruined by the application of the larger amount.

These are elements that enter into the establishment of the economic duty of water, but which the trial Court largely ignored in awarding to the Defendant what we believe to be an excessive amount of water per acre, and the only redeeming feature, from our viewpoint, is that a very large percent of the water which Defendant is allowed to divert returns to the channel of the river above Plaintiffs' reservoir.

The only evidence in the record on the duty of water is that of Mr. Darlington and Mr. Robinson, competent engineers testifying for the Plaintiffs, and they testified as to the duty of water on Plaintiffs' project, where it must be conceded more water per acre is required in view of the longer irrigation season, the lower altitude, and smaller precipitation. These witnesses both testified that one and one-half acre feet per acre would be practicable on this project (Record, pp. 68, 90). The trial Court, however, construed the contracts between the Plaintiffs and the settlers to require the Plaintiffs to deliver two and three-fourths acre feet per acre, and, while we

think such construction is erroneous, the fact remains that Plaintiffs are entitled to sufficient water to reclaim all the lands under their system, or approximately 150,000 acres, if the water supply were sufficient for that purpose. Hence the duty of water under Plaintiffs' project is not important in this case. It is apparent that Plaintiffs will develop the highest practical duty to the end that their surplus storage and carrying capacity may be utilized, if possible.

The recent bulletin referred to in Defendant's brief has no bearing upon this case, for it is dealing with crops which are not grown, and cannot successfully be grown, on Defendant's lands, and the investigations were made under conditions totally dissimilar to the climatic and soil conditions obtaining on Defendant's lands. Besides, these experiments in no sense attempt to establish the economic duty, but rather the point of diminishing returns, without regard to the fact that if that amount of water should be annually applied the land would soon be ruined by over-irrigation, as shown by the table heretofore referred to (Record, p. 286).

We shall next consider the acreage for which Defendant is entitled to water.

Acreage for Which Defendant Is Entitled to Water.

The principal claim urged by Defendant on this appeal is that the Court erroneously determined the acreage for which Defendant was entitled to water and that the decree does not either correctly or speci-

ficilly describe the land on which Defendant is entitled to use the water awarded to it.

In justice to the trial Court, as well as the Plaintiffs, we are impelled to say that if the description of the lands which Defendant has irrigated in the past and for which it is entitled to a prior right is in any sense uncertain, indefinite or erroneous, Defendant can not escape its full share of the responsibility for the error. In the answer and counterclaim, the lands were only generally described and the testimony introduced on behalf of Defendant, we believe, impressed the Court, as it did others, as being highly inaccurate and too unreliable as a basis for an important decree, and we again call attention to the concluding paragraph of the Court's decision (Record, p. 321) that "counsel for Plaintiffs are directed to prepare a draft of decree and submit the same to opposing counsel before offering it for signature."

It will not be denied by counsel for Defendant that the proposed decree was submitted to them and that they were invited to offer suggestions to the Court before the decree was signed, and if this had been done, clerical errors and inaccuracies in descriptions could readily have been corrected, and Plaintiffs are more than willing to join in a request to the trial Court to correct clerical errors in description or otherwise that counsel can point out.

The Court very properly says in its decision (p. 315):

"The evidence touching the acreage under irrigation is widely conflicting; and perhaps

that is to be expected where an appropriation is claimed for lands which were never cleared of the sagebrush or willows, and was never cultivated or cut over, but was used only for light pasturage."

The evidence, as stated before, is not only conflicting, but much of it seems largely conjectural and highly inaccurate. Even counsel for Defendant in their brief have been unable to harmonize their own figures. This is peculiarly a case where the findings of the trial Court on the facts ought not to be disturbed on appeal. All the evidence in this case was taken in open court; the trial judge had the advantage of seeing the witnesses and observing their manner of testifying, and many of them were examined at length by the trial judge on points that they had failed to make clear to him. He had the benefit of the explanation by the witnesses themselves of the maps and exhibits which they had prepared and which had been introduced in evidence, and it must be conceded by all that in cases of this character the trial Court has superior opportunities for determining the weight of the evidence and the credibility of the witnesses. We think this is well illustrated in the case of the two engineers who testified for Defendant and who had prepared elaborate maps purporting to show in great detail and with absolute accuracy the location of all ditches, dams, irrigation works and all tracts that were being irrigated.

Mr. E. C. McClellan, the principal witness for De-

fendant, testified that he had selected every acre of land owned by the defendant, with the exception of eighty acres on Big Goose Creek (p. 101). He introduces two maps (p. 102) marked Defendant's Exhibits No. 4 and No. 5, and he says:

"I made the map marked for identification as Defendant's Exhibit No. 4 from a survey made by me in 1889; the lines on the exhibit are correctly placed from the survey and notes made by me at that time."

And again (p. 105) he says:

"I made Defendant's Exhibit No. 5 from surveys made in October, 1889."

And throughout his testimony he refers repeatedly to his *surveys*, and a person listening to his testimony on direct examination was led to believe that he had presented most accurate data prepared from elaborate surveys. The maps were introduced in evidence and a large part of the record is devoted to the testimony of this witness based upon his maps and the "surveys" which he says he had made of the ditches, fields and lands of the defendant. On cross-examination he says (p. 133):

"I actually surveyed the outer boundaries of the shaded portions shown on Defendant's Exhibit No. 5. The exhibit is drawn and prepared according to stations and lines as they were run by me at that time."

When his attention was called to the fact that no stations appeared on his maps, he says:

"I put no stations on my original maps, nor any courses or distances in my notes. In fact, my notes consist simply of a plat or series of plats in my notebook."

He was then asked to explain more in detail how he had made the surveys and how his maps had been prepared, and, after a number of gyrations, this witness finally made the astounding statement that in making his alleged "surveys," covering many miles of territory that it would have required a crew of surveyors weeks to properly make:

*"I was alone and was engaged about four days in making those observations. The first sketch was made on the ground. The next I sketched out on a small scale or map the work I did each day. This map was larger than the map in my plat book and was left in camp. I used a transit in making my surveying and sketching my maps. I laid off my section lines and the quarter section lines, then sketched in from my plat book. I stepped the distances from the section corners. I was attempting to locating the lands that water was turned upon and was irrigated by the company, either by flooding or from water carried through ditches, sloughs and dams placed in the sloughs to spread the water over the ground. * * * * (p. 135). I made no distinctions on the map between the parts of the ranch that were never cut for hay and that where there were willows and other kinds of brush."*

Why the witness was making these elaborate "surveys" in 1889 the record does not show. The witness sometimes testified that he was trying to locate the land that was irrigated and at other times that he was attempting to locate ditches, and when his attention was called to the fact that the date the ditches were constructed did not at all correspond with the date of his alleged survey, he found some other reason why he was thus occupied, (pp. 266 and 227) the witness says:

"I located the ditch by simply noting the distance from the section line to the ditch at this point where it entered the field in the southwest corner. * * * I forget whether the ditch was there or not; I think the ditch was above the fence. I was merely locating partly the ditch and partly the field. It was really to locate the field and not the ditch, but it happened at one point that the ditch was inside the field and so in locating the irrigated land I actually located the ditch. My notes do not show the places where the ditch crosses the section line. * * * *I was alone when I stepped it and was carrying a transit to get the bearing.*"

We submit that the trial Court should not be criticised for not accepting unqualifiedly the testimony of this witness. The only other survey made by the Defendant of its ditches was made by a young engineer by the name of L. W. Beason. This witness produced an elaborate set of maps purporting to show the capacity and location of all ditches, dams

and the areas under them (Defendant's Exhibits 7, 11, 12, 13, 14 and 15). This witness shows (p. 193) that he was primarily concerned with finding the outer edges of Defendant's lands containing any evidence of grass being grown and having found these outer limits he proceeded to prepare maps purporting to show all the lands between such extreme limits as being irrigated, and he included in this acreage not only the channel of the river, but hundreds of acres of willows and brush. On page 194 he says:

"I located the exterior edge of the grass line on both sides of the river and platted it on the map. Then I measured the area on the *map* with a planimeter. * * * * We didn't actually measure the width at any point. We located the outside edge of that pasture land and all along the river with reference to the government corners, platted it to scale and measured the area on the map in square inches * * * * and from that figured the acreage."

He then explains that they did not actually measure or chain distances, and adds regarding the method which he had followed (p. 195):

"This method isn't strictly accurate; the degree of accuracy depends upon the number of times that you make observations."

He then admits that for long stretches the map that he had prepared shows irrigated land along the river where there are actually no irrigation works whatever. In one place he says (p. 195):

“It is about five miles from the dark green in section 11 to the head of that ditch. Throughout the entire distance there is not a single ditch or constructed irrigation works of any kind * * the strip referred to below the Vineyard Ranch is not entirely covered by willows. There are scattering willows along there. There are scattering willows and large bunches of willows all along the river. They are included in the pasture lands.”

The witness then testifies how he had determined the capacity of the ditches and his evidence on that point was so remarkable that we think the Court very properly declined to place much confidence in the testimony of this witness either as to his surveys or the land that was being reclaimed. The witness says (p. 196) :

“I didn’t measure the area under the various ditches that I referred to, so I cannot give the number of acres under the several ditches. In determining the capacity of the ditches I measured from the highest point on the lower bank to the average bottom of the ditch. I found that the ditches had an uneven bottom. I run a profile, about a thousand feet along each ditch, and took the average grade. To get the cross-section I took the surveyor’s level near the point of diversion in each case. The capacity of the ditch from the point of diversion to the first diversion out on the land is about the same in these sections. All those old ditches vary more or less

in cross-sections, and I took what I thought would give a fair capacity. The average grade and the smallest cross-section determines the capacity of the ditch. I took the smallest cross-section between the point of diversion and the first diversion onto the land. I didn't take any sections after any water had been turned out on the land."

The Court later examined the witness as follows:

"The Court:

"Q. You simply surveyed these lands in order to make these plats, you selected the outer edges of the tracts that grew grass or pasture, did you?

"A. Yes, sir.

"Q. Without any regard to whether or not it was irrigated?

"A. Yes.

"Q. You didn't make any examination to see whether it was irrigated or not? You simply took the place where grass was growing?

"A. Yes."

The record shows that the defendant attempted by glittering generalities and beautifully colored maps to impress on the Court that it had irrigated for many years immense tracts of land along the Salmon River. The evidence which it submitted, outside of that of the two engineers above referred to, was of the most general character and entirely insufficient as the basis for any definite decree.

The record shows that upon cross-examination Plaintiffs attempted in nearly every case to get an estimate from the witness as to the amount of hay that was cut, or the acreage that was cut over, or that was being irrigated, and the Defendant seemed equally anxious not to produce any specific or definite evidence on these points.

The witness, L. A. Nelson, testifying for Defendant, on cross-examination, said (p. 155) :

“In 1892 I think we put up 100 to 150 tons at the Middle Stacks. That was either in 1891 or 1892. I hardly think there was any put up at the Bore’s Nest nor at the San Jacinto Ranch. I think there was more put up at the Vineyard.
* * * * I couldn’t tell exactly how much land we cut over at the Middle Stacks, we would just skip around here and there and pick out the best of it in spots.”

Mark Conger, a witness for Defendant, says (p. 157) :

“I mowed the hay on the Hubbard Ranch and the Vineyard Ranch too. In 1901 to 1907 I should judge 200 or 300 tons was produced on the Hubbard Ranch and a similar amount on the Vineyard Ranch.”

The witness Greathouse, testifying for Defendant about a large number of desert entries which he and other cowboys made and afterwards conveyed to the company, says (p. 178) :

“We had to prove up on the land, and simply scattered the water to cover 320 acres. I was not raising any crop on any of it during the time I held it. Neither did Mr. Hewitt, Mr. Tesdell or Mr. Tinnin. Pretty nearly all of it was meadow land; part of it was covered with sagebrush. I did not clear the sagebrush. Tinnin’s land was natural meadow and some sagebrush. No improvements were made, except what I have described, and it was used for pasture. It was substantially in the same condition when I left it as when I found it, except some ditches or some dams had been put in. It was something similar to the kind of land that I found on the Salmon River, Middle Stacks and Vineyard. It was farmed and used in about the same way. I cut no hay on the Shoshone Ranches or on the Big Creek Ranches. In 1887 we put up about 100 tons at the Middle Stacks. In 1887 at the Vineyard Ranch we cut all the hay above the ranch house, some from the ranch house up toward the Hubbard; I couldn’t say just how many acres. I don’t think it was 300 acres; possibly 200 acres, but I won’t say. On Middle Stacks we cut considerable area. The hay was not so good and, of course, we cut a larger area in order to get more hay. * * * We picked out the best spots; some rye grass. They irrigated the land, but you might say didn’t have any system.”

It is singular, to say the least, that the Defendant did not produce a single officer, foreman or other witness to testify as to the acreage actually cut over or irrigated for hay. This suit was commenced in May, 1912 (p. 19), and the case was not tried until the spring of 1915, so there were three entire irrigation seasons or haying seasons to gather information on this point, but no one would testify either as to the acreage cut for hay or the number of tons produced, except as they were compelled on cross-examination to make estimates.

Mr. McClellan, the chief witness for Defendant, makes the following estimate as to the acreage cut over (p. 125) :

“As far as I can remember, there was no hay cut from there (Middle Stack field) until you get below the San Jacinto Ranch. My recollection is that there was some hay cut above and below the Bore’s Nest house shown on Defendant’s Exhibit 5 on both sides of the river.”

As to the number of tons cut, he says (p. 127) :

“It would be a very poor estimate that I could give as to the number of tons of hay cut on the Salmon River ranches, but I should guess it from somewhere between 200 to 300 tons; it did not vary much from year to year.”

And again:

“I am reasonably certain that alfalfa was placed upon about 20 acres at San Jacinto in 1893. The crop was just ordinary; it might be

2 or 3 tons to the acre. I think this alfalfa is still there. * * * The alfalfa was on the bench land. This is the only crop of tame grass, except some at the Bridge Ranch. * * * Alfalfa was cut twice a year."

At another place this witness says (p. 135) :

"In 1889 I don't think over 1000 acres had been cut for hay any season in both tracts. Fully that acreage has been cut over; not entirely on those lands, but on other lands placed under irrigation. The land that was cut over when I first knew the country is almost all used for hay land; some of it has grown up to willows, and they used it for pasturage. In 1904 there were 4000 or 5000 acres being cut over. They were cutting over land that had formerly been used for pasture and sagebrush that had never been irrigated. *When I saw the land in 1909 it was not in substantially the same condition as in 1904.* A great deal of brush had been cleared off and they had cut hay off of it. That was all up and down the valley from the Hubbard Ranch to the Bore's Nest. It appeared to me from just what I noticed in traveling down the valley that they had cleared off brush from all parts of it in different small pieces, say a few acres in one place and 15 or 20 acres in another, under works that had been constructed previously."

The conditions in 1909 could not, of course, have been considered by the Court, for Plaintiffs' rights

were initiated in December, 1906, but from this mass of conflicting evidence and unreliable estimates the trial Court had the burden of determining the acreage that had been irrigated for hay and the acreage that was irrigated for pasture prior to December, 1906.

William Yost, a witness for Plaintiff, testified in rebuttal that he had worked for the Defendant for six or seven years, commencing in 1896. The testimony of this witness is most interesting as it shows how much land a competent irrigator can irrigate under the system of irrigation used by the Defendant. He says:

“My headquarters during the first three years was at the Vineyard and Hubbard. After that I was irrigating on the Salmon River from Bird’s Nest to Bore’s Nest; four or five years. I did not do all of the irrigating. I had one man most of the time; part of the time I did it alone. In the early part there were two of us in fixing up the dams; in the latter part I might be alone and was part of the time. From June until the first of July, only about a month, I was alone. The occasion for having a man with me in the spring was that we had to fix up the dams and heads of the ditches, etc. We generally called it about ten or twelve miles from the Bird’s Nest to the Bore’s Nest. We did whatever irrigation was done on both sides of the river between those points, or most of it. I did the mowing between the San Jacinto and Bore’s Nest. Sometimes

there were two or three machines doing the mowing. We took something like 50 or 55 days to cover the land. I don't know about the time that I was alone or when there was two machines. I couldn't tell just the amount of days it would have taken one machine to cut over the lands that was cut for hay. I don't know that it would take quite a hundred, because I don't remember just what time there was two or three machines running. I don't believe a man can average over eight or ten acres a day with one machine. I don't believe that there is a great deal of difference in the area between the San Jacinto buildings to the Bore's Nest, or in hay there, than above the San Jacinto buildings. I think the largest acreage cut over is above the San Jacinto. I mean the Bird's Nest and Middle Stacks. The land we cut over was not taken in solid tracts. We just mowed the bottom lands, the best part of the hay. We didn't mow it all. The fields would be irregular."

It is shown by the testimony of others that from five to six weeks was usually consumed in cutting and putting up the hay. That one outfit took the Middle Stacks and Bird's Nest fields, another what is south from San Jacinto to Bore's Nest, and a third the Vineyard and Hubbard ranches. It appears, also, that they averaged less than two machines a day in each camp, and it is also clear that one mowing machine would not average more than about eight acres a day.

We think the above are the most accurate estimates that can be formed as to the acreage cut over, and when worked out it will demonstrate that the area cut over is considerable less than 3,000 acres, and this is borne out by the estimates of the amount of hay produced.

Mr. Workman, a witness on behalf of Plaintiffs, in rebuttal, testified that he had been foreman of the San Jacinto Ranch for nearly two years. He says (p. 260) :

“In 1911 and for some years prior to that, I seen no hay cut at the Bird’s Nest. I was familiar with the ranch and noticed no hay being cut at the Bird’s Nest from 1899 until 1912. I was on the river most every year during the summer time. Hay was cut at the Middle Stacks. The hay that was cut from the San Jacinto to the Bore’s Nest was measured in 1911; I assisted in measuring it. My recollection is that there was somewhere between 400 and 500 tons. In that year hay was being cut on the San Jacinto Ranch only in the Middle Stacks, San Jacinto and Bore’s Nest. This number of tons of hay includes just from San Jacinto down to Bore’s Nest. My estimate would be that there was more hay cut there than at the Middle Stacks; not much more. There would be a little more than half, I would say, cut at the Middle Stacks than at San Jacinto to the Bore’s Nest.”

The only definite evidence on the acreage actually irrigated is that of Plaintiffs' witnesses Darlington and Stocking, who had made an accurate survey with a crew of surveyors, consuming about five weeks in doing so, of all the Salmon River ranches of the Defendant. They took the maps which they had prepared and the maps that had been prepared by Defendant and prepared a composite map showing the discrepancies between the two sets of maps. This composite map is known as Plaintiffs' Exhibit No. 33, and the condition of the land which had been included as irrigated land on the maps of Defendant, but which had been classed as non-irrigated land by Plaintiffs' engineers, is carefully described by both Mr. Darlington and Mr. Stocking in their testimony on rebuttal. Mr. Darlington's testimony commences on page 241 and Mr. Stocking's testimony commences on page 249 of the record. Mr. Darlington took a number of kodak pictures showing that much of these "pastures" or "meadows" is simply sagebrush land in its native condition. Mr. Stocking had charge of the surveying party and he testifies in great detail as to the condition of every piece or parcel which Plaintiffs had excluded as non-irrigated land, but which Defendant had included as land that was either cut over or used for pasturage.

We submit that an examination of the record will show that the testimony of Messrs. Darlington and Stocking, when read in connection with Plaintiffs' Exhibit No. 33 (the composite map), will show clearly that the Defendant was awarded water for a much

larger area than it had actually irrigated or reclaimed prior to 1907.

We pass next to a consideration of the priority of what is known as the Harrell or High Line Canal.

Priority of Harrell Ditch or High Line Canal.

The trial Court very properly held that Defendant had not complied with the statutes of Nevada in the construction of the Harrell Ditch so as to entitle it to the benefit of the doctrine of relation, or a priority as of the date when it filed its alleged water notice with the County Recorder of Elko County. Whether the Court unduly limited the effect of the notice which Defendant introduced in evidence is wholly immaterial as the evidence which followed conclusively showed that the Harrell ditch had not been constructed with such diligence as would entitle Defendant to claim a water right under the notice.

At the time Defendant made the alleged appropriation the laws of Nevada provided as follows, relative to the diligence required in order to obtain the benefit of the doctrine of relation where notices had been posted (Water Law 1889, Session Laws p. 51, Section 12) :

“That hereafter, every person, company or corporation constructing, enlarging or extending any ditch, canal or reservoir for beneficial purposes and intending to use or appropriate any water from any natural stream or lake within any water district for such beneficial purposes, shall file with the County Recorder of

the proper county before the commencement of the construction, enlargement or extension of such ditch, canal or reservoir, a statement showing the stream or streams, the point or place in said stream at or near which the water is to be taken out * * * * and likewise, of any and all enlargements thereof, and from the time of the filing of any such statement, water sufficient to fill such ditch or ditches and to subserve the use or uses aforesaid, if a lawful and just use, shall be deemed and adjudged appropriated. Provided, that nothing herein contained shall be permitted to interfere with a prior right to said water, or to any thereof, and provided further, that such person or persons, or corporation shall within sixty days next ensuing the filing of such statement, begin the actual construction of said ditch or ditches, *and shall prosecute the work of construction thereof diligently and continuously to its completion*, and provided further, that the beginning of all necessary surveys of such ditch or ditches shall be construed as the beginning of such work of construction." (Our italics.)

It will be noted that the Nevada Statute is substantially the same as the law that has obtained in the arid west from the time appropriations through the posting of notice was first recognized, and the controversy relative to Defendant's rights under its notice can be disposed of here by simply examining the evidence as to the diligence observed by the De-

fendant in the prosecution of the work of constructing the canal in question.

The words "diligently and continuously" as used in the statute, have been so frequently construed that we shall not encumber the brief by any lengthy citations of authorities on the point, and it is elementary law that no rights can be claimed under the notice unless the subsequent acts required by the statute have been fully complied with within the time and in the manner specified in the statute.

Wiel on Water Rights (3rd Ed.), Sec. 385.

Kinney on Irrigation and Water Rights
(2nd Ed.), Sections 741 and 1118.

Ophir S. M. Co. vs. Carpenter, 4 Nev. 534.

Kinney on Irrigation, at Section 741, says:

"Unreasonable delay in the final consummation of the right is always fatal as against the rights acquired by subsequent appropriators. This has been the rule from the first in all states and territories where the law of appropriation is in force."

In Section 1118, the same author says:

"Water rights, ditches, canals and other works, together with the easements over the lands of others for the same, may be lost by forfeiture. * * * * Forfeiture is a punishment annexed by law to illegal acts or negligence in the owner of lands, tenements, or hereditaments, whereby he loses all his interest therein.

"The element of intent, therefore, so neces-

sary in the case of an abandonment, is not a necessary element in the case of forfeiture. In fact, a forfeiture may be worked directly against the intent of the owner of the right to continue in the possession and use of the right. Therefore, forfeiture as applied to water rights and other rights in this connection is the penalty fixed by statute for the failure to do, or the unnecessary delay in doing, certain acts tending toward the consummation of a right within a specified time; or, after the consummation of the right, the failure to use the same for the period specified by the statute."

The leading case on the definition of diligence required in the construction of irrigation works is *Ophir Silver Mining Company vs. Carpenter*, 4 Nev. 534, and this was decided even before there was any statute in the State of Nevada requiring that such work should be constructed "diligently and continuously to completion." In that case, the delays were inconsequential as compared with the delays in the case at bar. The period during which it was claimed there had been no steady or continuous work was from 1858 to the fall of 1862, and during that period there was more or less work done every year. The Court refers to the fact that during 1860 only two men were engaged for a few days in cleaning out the ditch, and adds:

"The year 1861 is little less barren of results.

A few men were employed for a period of three

months only, who, Rose says, were engaged in cleaning out and enlarging the ditch. From the fall of 1861 to the summer of 1862 nothing appears to have been done. In the summer from three to twenty men were employed and continued work for about five months. * * * Thus it appears that from the fall of 1859 to the summer of 1862, a period of over two years and a half, work was done upon the ditch for about three months only; that was during the year 1861, when Rose testifies that from seventeen to twenty men were employed. * * * *

“In our judgment, those facts exhibit an utter want of diligence in the prosecution of the design which it is claimed was undertaken by Rose. If the labor of twenty men for three or four months, in a period of two years and a half, constitutes diligence in the prosecution of such a vast enterprise as this, it is difficult, if not impossible, to designate the entire want of diligence. The manner in which this work was prosecuted certainly does not accord with what is generally understood to be reasonable diligence. Diligence is defined to be the ‘steady application to business of any kind, constant effort to accomplish any undertaking.’ The law does not require any unusual or extraordinary effort, but only that which is usual, ordinary, and reasonable. The diligence required in cases of this kind is that constancy or steadiness of purpose or labor which is usual with men engaged

in like enterprises, and who desire a speedy accomplishment of their designs. Such assiduity in the prosecution of the enterprise as will manifest to the world a *bona fide* intention to complete it within a reasonable time. It is the doing of an act, or series of acts, with all practical expedition, with no delay, except such as may be incident to the work itself. The law, then, required the grantors of the defendants to prosecute the work necessary to an execution of the design with all practical expedition."

Since the above decision was rendered, both the legislatures and the courts have become more exacting in the requirement of diligence on the part of appropriators of water, and in view of the above decision of the Supreme Court of Nevada, long before there was any statute on the subject, and in view of the settled law on the subject in other states that diligence in the construction of the works must be observed otherwise no benefit can be claimed under the notice, the trial Court could not do otherwise than disregard the notice under which Defendant claims a water right for its extension and enlargement of the Harrell Canal.

The diligence observed by Defendant and his predecessor in interest in the construction of this canal fails so utterly to come within the requirements of the law that we shall simply refer to the testimony submitted by Defendant itself.

Hugh McGuire, a witness for Defendant, on cross-examination, said (p. 162) :

“The work on the Harrell Ditch I testified about was being done at times when we were not engaged in other work. I do not know of any work being done on it in 1905 or 1906. I wasn’t there all the time. I am quite positive no work was done. The work was extending the Harrell Ditch from the lane to the old work. It took about two months. This was in 1901. The first extension after that was in 1904, when it was extended north across the lane about a quarter of a mile. This part, I think, was about 18 inches to 2 feet deep. That part wasn’t used for irrigation that I know of while I was there. It was in that condition from 1904 to the end of 1906 when I left. The constructed part of the Harrell Ditch was not enlarged after I went there, but part of it was not finished in the bottom and I finished taking that out and increased its capacity. We would go from one ditch to another and repair and fix up the dams, and when there was nothing else to do would do some construction work. The lane I have referred to is the lane on the road from the Bridge Ranch, as you call it, to San Jacinto. * * * * I left the company in 1908.”

Mr. Adam Patterson, apparently the managing agent of Defendant at the time it purchased the properties from the Sparks-Harrell Company, says (p. 166):

“I received the ranch for the Vineyard Company the first of November, 1908. I went out

on the properties first in August, 1908. When I had charge of the property we built the Harrell ditch from what is called the San Jacinto lane to a point north of there where the ditch makes a big bend. There had been a little work done at the San Jacinto lane, a distance of about 200 or 300 yards, I should judge. We made the extension in the latter part of May or the first of June, 1909. About a quarter to a half mile of ditch was constructed at that time with teams and scrapers. We had ten teams."

Mr. Beason, the present superintendent of Defendant, testifies as follows (p. 213) :

"When I went on to the property in 1910 the big ditch wasn't finished. The upper end of it was used for irrigating the land above the lane. There was some work done on the big ditch in 1910, 1911 and 1912. It was finished to the present terminus of the ditch in 1912. The first year I was there the principal work on the ditch was from the lane up."

Even in the case of pioneer settlers, handicapped by poverty and lack of means, no Court has ever held that doing a little construction work now and then when they had nothing else to do, with periods of absolute cessation for a year or two or three at a time, constituted diligence or continuous work. When Plaintiffs commenced the construction on their project, there was an absolute cessation of work and had been for several years on the Harrell ditch. It

had been constructed about to the San Jacinto lane and to a small extent the upper part of the ditch had been used for irrigation. Plaintiffs had a right to assume that all rights under the alleged notice had been abandoned, except in so far as the ditch was then constructed, and when Defendant again commenced work in 1909 or 1910 to extend and enlarge this ditch it had notice that Plaintiffs were proceeding in good faith with the building of an immense irrigation enterprise, involving the expenditure of many millions of dollars, and including the construction of railroads and the building of towns and the reclamation of upwards of 150,000 acres, and that Plaintiffs were relying absolutely upon Defendant claiming only such water in the Salmon River as it had applied to a beneficial use.

It is useless for Defendant to urge that its large investment ought to be protected, for that investment was made after Plaintiffs' rights had been initiated and after Plaintiffs had expended in the development of its project probably a hundred times as much as Defendant expended in the enlargement and extension of the Harrell Canal. If the rights to the waters of Salmon River should be determined according to the expenditures that have been made in the building of irrigation projects and the reclamation of the desert and the development of the country, then we respectfully submit that Plaintiffs should have a far larger proportion of the waters of Salmon River than they received in this case.

RULINGS ON EVIDENCE.

The trial Court did not err in its rulings on the evidence offered by the Defendant.

The witness McClelland did not show that he was at all qualified to testify as an expert on the duty of water. The evidence which he had already given on related matters, together with his answers in the examination as to his qualifications made by the trial judge, as well as by counsel for Plaintiffs, show conclusively that he did not come within the rule entitling him to testify as an expert.

If any error was committed in the rulings on evidence, they were harmless, to say the least.

The Court Had Jurisdiction of the Parties and the Right to Make Provisions For Enforcing Its Decree.

The contention that the Court could make no provision for the enforcement of its decree needs no extended consideration in view of the numerous decisions determining water rights on inter-state streams. In this case the Court had jurisdiction of the person of the Defendant, and the fact that the land on which some of the water would be applied was situated in another State, does not prevent the Court from determining the case before it, where part of the stream or *res* is within the jurisdiction of the Court.

It is settled law that where jurisdiction of the person can be obtained, the Court has authority to determine the rights of all parties to the suit to the use of the waters of a stream.

The courts have repeatedly entertained jurisdiction and determined the rights to the use of water of inter-state streams.

Taylor v. Hulett, 15 Ida. 265; 97 Pac. 39;
19 L. R. A. (N. S.) 535.

Miller & Lux v. Rickey, 127 Fed. 573.

Rickey v. Miller & Lux, 152 Fed. 11, (C.
C. A., 9th Circuit).

Willey v. Decker, 11 Wyo. 496; 100 Am.
St. Rep. 939; 73 Pac. 210.

Morris v. Bean, 146 Fed. 425.

Bean v. Morris, 159 Fed. 651; 86 C. C. A.
519.

Anderson v. Bassman, 140 Fed. 22.

Rickey etc. Co. v. Miller & Lux, 218 U. S.
258.

Kansas v. Colorado, 206 U. S. 46; 51 L. Ed.
956; 46 L. Ed. 838.

1 *Wiel on Water Rights in Western States*
(3rd Ed.), Sec. 340.

In the State of Nevada the doctrine of appropriation obtains and neither the State nor Defendant can therefore object to the Court determining the rights of the parties to this suit on that basis, although the parties may claim under the laws of different states.

*The Court Did Not Err in Awarding Plaintiffs
Rights Based Upon the Acreage for Which
They Had Sold Water Rights.*

Defendant can not complain because the Court based Plaintiffs' rights on the acreage for which they

had actually contracted to deliver water. If any error was committed in this regard, it was in the Court not giving to Plaintiffs the amount called for by their permits. The fact that Plaintiffs eventually can not hold more than they apply to a beneficial use is wholly immaterial.

The laws of the State of Idaho (Session Laws 1915, p. 216) provide:

“That upon irrigation projects where the canals constructed cover an area of 25,000 acres or more, the license issued shall be issued to the persons, association, company or corporation owning the project, and final proof may be made by such owners for the benefit of the entire project, and it shall not be necessary to give a description of the land by legal subdivisions, but a general description of the entire area under the canal shall be sufficient, and water diverted and the water right acquired thereby shall relate to the entire project and the diversion of the water for the beneficial use under the project at any time within a period of ten (10) years shall be sufficient proof of beneficial use without regard as to whether each and every acre under the project is irrigated or not.”

Under this statute, Plaintiffs were in fact entitled to have awarded to them the entire amount called for by their several permits. Should they fail to apply the water to a beneficial use within the time fixed by law, their rights would, of course, lapse as to the

water not so applied, but no provision in the decree is required for such contingencies; that is sufficiently cared for by the general law, which permits Defendant to use all the waters of the Salmon River not beneficially applied by others having prior rights thereto. The fact that an appropriator has his rights decreed by Court does not relieve him from the necessity of complying with the laws of the State as to the use to which the water must be applied in order to retain the right.

The Basis of the Court's Decree.

The Court arrived at its conclusion, as to the amount of water to which Defendant was entitled, by three different methods. It properly considered the Herrington report as it was undoubtedly the most reliable and dependable data before the Court on the amount of water which Defendant had used, and on the return flow, but it was not the only evidence on the question. A number of Defendant's witnesses showed that a large part of the water used upon the bottom lands returned to the channel of the river. It was also conceded that this was not true as to the bench lands, especially those under the Harrell or High Line canal, and the Court very properly provided that if Defendant desired to use the water on the bench lands under this canal it would be permitted to do so after showing the loss in the return flow that would result from such change of place of use, and upon making appropriate provision against loss to Plaintiffs from such change.

The decree in this respect is more liberal than is usual in decrees in water suits. It is the general rule to specifically describe the land to which the water may be applied and to permit no change, unless it can be shown that no injury will result to other appropriators. Whereas, in this case, the Court especially provided that, even though injury does result, the change will be permitted upon an allowance being made by the Defendant for the resulting injury to other appropriators.

Wherefore, we respectfully submit that the decree appealed from should be affirmed.

Respectfully,

RICHARDS & HAGA,

J. L. EBERLE,

Solicitors for Appellees,

Residence: Boise, Idaho.

No. 2886

United States
Circuit Court of Appeals
For the Ninth Circuit

VINEYARD LAND AND STOCK COMPANY, a Cor-
poration, and UTAH CONSTRUCTION COMPANY,
a Corporation, Appellants.

VS.

TWIN FALLS OAKLEY LAND AND WATER
COMPANY, a corporation, and OAKLEY CA-
NAL COMPANY, a corporation, Appellees.

Transcript of the Record

NOV 29 1916

F. D. Monckton
Clerk

*Upon Appeal from the United States District Court
for the District of Idaho, Southern Division.*

No.

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*In the District Court of the United States, for the
District of Idaho, Southern Division.*

TWIN FALLS OAKLEY LAND AND WATER
COMPANY, a corporation, and OAKLEY CA-
NAL COMPANY, a corporation,

Plaintiffs,

VS.

VINEYARD LAND AND STOCK COMPANY, a
corporation, and UTAH CONSTRUCTION COM-
PANY, a corporation,

Defendants.

BILL—No. 510.

*To the Honorable, the Judge of the District Court,
of the United States, for the District of Idaho,
Southern Division:*

The Twin Falls Oakley Land and Water Company, a corporation organized and existing under the laws of the State of Delaware, and a citizen of said State of Delaware, and the Oakley Canal Company, a corporation organized and existing under the laws of the State of Idaho, and a citizen of said State of Idaho, bring this, their bill, against the Vineyard Land and Stock Company, a corporation organized and existing under the laws of the State of Utah, and a citizen of said State of Utah, and the Utah Construction Company, a corporation organized and existing under the laws of the State of Utah, and a citizen of said State of Utah, and thereupon your orators complain and say:

I.

That the Twin Falls Oakley Land and Water Company is a corporation organized and at all the times hereinafter mentioned was existing under the laws of the State of Delaware, and duly authorized and empowered to do business in the State of Idaho, having complied with the laws thereof relative to foreign corporations, and that it is now and was at all of the times hereinafter mentioned, a citizen of the State of Delaware.

That the Oakley Canal Company is a corporation organized and at all of the times hereinafter mentioned was existing under the laws of the State of Idaho, and that it is now and at all of the times hereinafter mentioned was a citizen of said State of Idaho.

II.

That the defendant, the Vineyard Land and Stock Company, is a corporation organized and at all of the times hereinafter mentioned was a corporation existing under the laws of the State of Utah, and is now and at all of the times hereinafter mentioned was a citizen of the said State of Utah.

That the Utah Construction Company is a corporation organized and existing under the laws of the State of Utah and is now and was at all of the times hereinafter mentioned a citizen of said State; that each of said defendant corporations has complied with the laws of the State of Idaho with reference to the appointment of a statutory agent upon whom the service of process may be made.

III.

That on or about the 15th day of June, 1908, Samuel H. Hays made an application to the State Board of Land Commissioners of the State of Idaho, under the provisions of Section 1615 of the Revised Codes of the State of Idaho, wherein and whereby said Samuel H. Hays proposed to construct certain irrigation works in Cassia County, State of Idaho, for the purpose of irrigating approximately forty-four thousand (44,000) acres of land situated in Townships twelve (12), thirteen (13), and fourteen (14) South, and Ranges twenty-one (21), and Twenty-two (22) East, Boise Meridian, in Cassia County, State of Idaho, said lands being arid in character and requiring irrigation in order to produce an agricultural crop.

That for the purpose of irrigating said land, said Samuel H. Hays proposed to divert the waters of Goose Creek in said Cassia County, to the extent of fifteen hundred (1500) cubic feet per second of time, and said Samuel H. Hays requested the State Board of Land Commissioners to procure the segregation of the lands hereinbefore mentioned, and also to procure a contract to be entered into between the United States of America, and the State of Idaho, under the terms of what is commonly known as the Carey Act, wherein and whereby the United States of America should promise and agree to convey to said State of Idaho the lands hereinabove described when said State should have procured the building of the necessary works for the irrigation of said lands; that said

proposal and request was received and after a report by the State Engineer of the State of Idaho, was accepted by said State Board of Land Commissioners of said State of Idaho.

That application was thereafter made for the segregation of said lands by the State of Idaho, and thereafter, the United States of America entered into a contract with the State of Idaho wherein and whereby said United States of America promised and agreed to convey to said State of Idaho the aforesaid lands upon the State securing the construction of the necessary irrigation works for the irrigation of the said lands.

IV.

That the Twin Falls Oakley Land and Water Company, one of the plaintiff corporations, was organized, among other things, for the purpose of constructing irrigation works in the State of Idaho under contract with said State.

That the said Samuel H. Hays, with the consent of the State Board of Land Commissioners of the State of Idaho, after making the proposal and request hereinbefore mentioned, conveyed to the plaintiff, the Twin Falls Oakley Land and Water Company, a corporation, all of his rights and interests acquired under and by virtue of said proposal and request.

V.

That thereafter, on the 12th day of August, 1909, the said Twin Falls Oakley Land and Water Com-

pany, one of the plaintiffs herein, made and entered into a contract with the State of Idaho under the terms of what is commonly known as the Carey Act, and the legislation of the State of Idaho supplemental thereto, wherein and whereby said Twin Falls Oakley Land and Water Company contracted and agreed with the State of Idaho to build and construct certain irrigation works in Cassia County, State of Idaho, consisting of a dam and canals for the irrigation of the lands hereinbefore mentioned, a copy of which contract, omitting the description of the lands to be irrigated, is filed herewith, hereby referred to and made a part hereof and marked Exhibit "A"; that the lands described in said contract and to be irrigated by the works therein described are shown and delineated on the plat annexed to said Exhibit "A";

That it was provided by the terms of said contract that the irrigation works should be constructed for the purpose of utilizing the waters of Goose Creek under permit issued by the State Engineer of the State of Idaho, No. 3751, for 500 cubic feet per second of the waters of said creek, together with other permits;

That the plaintiff herein, the Twin Falls Oakley Land and Water Company, has completed the construction of the irrigation works provided in said contract with the State of Idaho, referred to as Exhibit "A" herein;

That it is necessary to divert water from said Goose Creek at the points specified in the said con-

tract, Exhibit "A," in the County of Cassia, State of Idaho, to the amount and extent hereinafter specified for the irrigation of the lands hereinbefore mentioned; that the highest flow in high water of the said Goose Creek is less than eighteen hundred (1800) cubic feet per second of time, and that it is necessary to gather and use the entire flow of said Goose Creek for the purpose of irrigating the aforesaid lands and procuring the necessary water therefor.

VI.

That on the 27th day of March, 1908, Samuel H. Hays, the predecessor in interest of the plaintiffs herein made application to the State Engineer of the State of Idaho for authority and permission to divert 500 second feet of the waters of said Goose Creek in said Cassia County, State of Idaho, for the purpose of irrigating the lands hereinabove mentioned; that thereafter the State Engineer of the State of Idaho issued to the said predecessor in interest of the plaintiffs herein Permit No. 3751 authorizing and permitting the predecessor in interest of the said plaintiffs to divert from said Goose Creek, in said Cassia County, State of Idaho, 500 second feet of the waters of said stream for the purpose of irrigating said before mentioned lands;

That said permit was acquired in the interest of the plaintiff corporations and has been conveyed and transferred to the Twin Falls Oakley Land and Water Company, one of the plaintiffs herein for the use and benefit of the Oakley Canal Company and the stockholders of said last named company;

That on the 10th day of March, 1909, the predecessor in interest of the plaintiff companies made application to the State Engineer of the State of Idaho for authority and permission to divert 1000 second feet of the waters of said Goose Creek, in said Cassia County, State of Idaho, for the purpose of irrigating the lands hereinbefore mentioned; that thereafter the State Engineer of the State of Idaho issued to said predecessor in interest of the said plaintiff companies Permit No. 4731, authorizing and permitting the predecessor in interest of the plaintiffs to divert from said Goose Creek, in said Cassia County, 1000 second feet of the waters of said stream for the purpose of irrigating the aforementioned lands, and that said permit and all rights acquired thereunder have been heretofore conveyed to the Twin Falls Oakley Land and Water Company for the use and benefit of the Oakley Canal Company, and the stockholders thereof;

That the Twin Falls Oakley Land and Water Company thereafter commenced and completed the construction of the irrigation works provided for and set forth in each of said permits, said works being so located that the aforesaid lands might be irrigated therefrom, and having sufficient capacity therefor. That the said works so constructed are the said works specified in the said contract with the State of Idaho, Exhibit "A"; that said irrigation works have been heretofore completed and that the State Engineer of the State of Idaho, did on the 19th day of July, 1913, issue to the said Twin Falls Oakley

Land and Water Company, the holder of said Permit 3751, a certificate of completion of works as provided by the laws of the State of Idaho;

That thereafter, and on or about the first day of June, 1914, and within the proper time specified under the laws of said State of Idaho, the Twin Falls Oakley Land and Water Company made proof of the completion of its works under Permit No. 4731; that said proof of completion of works has been duly approved and that a certificate of completion of the works therein specified will be hereafter issued;

That in addition to said permits, the Twin Falls Oakley Land and Water Company has purchased rights to the use of the waters of Goose Creek from the various former users of said waters to the aggregate extent of 300 second feet, and that said rights are held by the Twin Falls Oakley Land and Water Company for the use and benefit of the Oakley Canal Company and the stockholders thereof;

That plaintiffs, and the water users acquiring rights from them, have priority to the use of the waters of said Goose Creek to the extent of 300 cubic feet per second prior and superior to the rights of all other persons using the waters of said stream, and have the right to the use of the waters of said stream to the extent of 500 cubic feet per second additional, prior to the rights of all other persons whose rights have accrued subsequent to the 27th day of March, 1908, and also have the right to the use of 1,000 cubic feet per second additional of the waters of said Goose Creek prior to all other persons whose rights

date subsequent to the 10th day of March, 1909; that they require the entire flow of Goose Creek and of all of the tributaries thereof above the point of diversion mentioned in said permits and in said contract, Exhibit "A," for the irrigation of the lands above mentioned and to supply the rights of the plaintiffs herein and those claiming under them.

VII.

That Goose Creek above the point of diversion of plaintiffs' is formed by various small streams and creeks having their sources in the State of Idaho, and the State of Nevada, which join together in the State of Nevada and flow thence northward into the County of Cassia, State of Idaho, and thence emptying into the Snake River in said State.

VIII.

That under the terms of said contract, Exhibit "A," between the State of Idaho and the said Twin Falls Oakley Land and Water Company, one of the plaintiffs herein, it was provided and required that the said Twin Falls Oakley Land and Water Company, commonly known as the Construction Company, should construct the irrigation works therein provided for and should thereafter organize a certain company to be called the Oakley Canal Company, which company should, after the completion of the works, own, operate and conduct the same and all water and water rights used in connection therewith as is more particularly set forth in said contracts, Exhibit "A" and "B," to which reference is hereby made.

That after the making of said contract, Exhibit "A," and of the contract between the United States of America and the State of Idaho, providing for the transfer to said State of the hereinbefore described lands approximating 44,000 acres, said lands were thrown open for settlement by the State of Idaho in pursuance of the provisions of the laws of said State relating thereto and upwards of four hundred (400) persons made entries of land upon said lands hereinbefore described in pursuance of the laws of said State, and purchased shares of stock in the Oakley Canal Company as provided in said contract Exhibit "A," and said persons are desirous of using and are entitled to use the waters of said Goose Creek for the irrigation of their said lands to the extent hereinbefore specified and that said waters are necessary for the irrigation of the above mentioned lands. That under the provisions of the laws of the State of Idaho relative thereto, said persons are required to irrigate and reclaim their lands by means of said irrigation system in order to acquire title to said lands;

That the United States of America will not make conveyance of the lands hereinbefore mentioned to the State of Idaho until said irrigation works are constructed and a supply of water sufficient for the reclamation of said lands is provided through said irrigation system.

IX.

That at the time of the making of entry of the lands above described by the aforementioned entrymen, each of said persons entered into a contract

with the Twin Falls Oakley Land and Water Company in the form of a copy of which is filed herewith and marked Exhibit "B" and hereby referred to and made a part hereof.

X.

That the defendant, the Vineyard Land and Stock Company has commenced and is now constructing and had constructed canals and ditches in the State of Nevada for the purpose of diverting and using the waters of Goose Creek and its tributaries and preventing the same from flowing down said stream into the State of Idaho, and preventing the use of said waters by the plaintiffs herein and by the stockholders of said Oakley Canal Company; that the said defendant threatens to and will, unless prevented by the order, decree and judgment of this court, divert, consume and use the waters of said stream before the same reach the irrigation works of the plaintiffs herein, and will prevent the use of said waters by said plaintiffs and the stockholders of said Oakley Canal Company to the extent and in the manner in which said stockholders are entitled, to use the same as set forth in said Contract, Exhibit "A," and in the contract Exhibit "B" hereinbefore mentioned;

That plaintiffs are unable to ascertain the exact nature or extent of the claim made by the said defendants to the waters of said Goose Creek, or of its tributaries above the point of diversion of plaintiffs' works, but that all of the rights of the said defendants thereto are subsequent and subject to the rights of the plaintiffs herein and of the stockholders of the said Oakley Canal Company.

XI.

That the Oakley Canal Company, one of the plaintiffs herein, is the company mentioned in said agreement Exhibit "A," and is commonly known as the Operating Company and is the company whose shares of stock represent the water rights of the settlers upon the lands before mentioned, and is the company for whose use and benefit the said irrigation works were constructed, all of which more fully appears by reference to said Exhibit "A";

That the plaintiffs herein and the stockholders of the said Oakley Canal Company, according to their respective interests, are the owners and holders of said irrigation works and the water rights and permit hereinbefore mentioned, and are now entitled to divert at plaintiffs' point of diversion from the said Goose Creek eighteen hundred (1800) cubic feet per second of time of the waters of said creek, being the entire flow thereof, and of all of the tributaries thereof above the point of diversion hereinbefore mentioned, which point of diversion is situated in Cassia County, State of Idaho, and to impound said waters in a reservoir as provided in the contract Exhibit "A." That all of the waters of said Goose Creek are required for the irrigation of the lands hereinbefore mentioned, which said lands are under and may be irrigated from the irrigation system of the plaintiffs herein.

XII.

That the defendant, the Vineyard Land and Stock Company, is the owner of lands in the State of Ne-

vada and in the State of Idaho; that said corporation has designated Twin Falls County, State of Idaho, as its principal place of business in said State, and has appointed an agent therein upon whom the service of process may be made and has filed the designation of such agency with the Secretary of State of the State of Idaho, and with the County Recorder of said Twin Falls County, and that C. B. Channell of Twin Falls County is the agent of said Company so designated;

That the defendant, the Utah Construction Company is the owner of lands in the State of Nevada and in the State of Idaho, and is, as plaintiffs are informed and believe, the owner of the stock, or nearly all of the stock of the Vineyard Land and Stock Company and has control of the said company and directs its operations; that said Utah Construction Company has designated Rexburg, in the County of Madison (formerly Fremont), State of Idaho, as the principal place of business in the State of Idaho, and has appointed I. N. Corey as its agent therein upon whom the service of process may be made and has filed the designation of such agency with the Secretary of State of the State of Idaho as required by law. That each of defendants is engaged in business in and owns property within the State of Idaho.

XIII.

That the plaintiffs herein and those claiming under them are entitled to the use and enjoyment of the waters of said Goose Creek and are entitled to impound the waters thereof in the reservoir mentioned

in said contract Exhibit "A," in order to better utilize the said waters for the irrigation of the lands hereinbefore mentioned, and that plaintiffs and those claiming under them have a prior right to the use of said waters prior and superior to that of the defendants, or either of them; that notwithstanding the priority of the rights of the said plaintiffs and those claiming under them, the said defendants set up and claim some right to the use of the waters of Goose Creek and the tributaries thereof above plaintiffs' point of diversion superior to the rights of the plaintiffs and those claiming under them.

WHEREFORE, your orators pray that the said defendants and each of them be required to fully set forth the nature of their claims to the use of the waters of said Goose Creek and of the tributaries thereof; that the right, title and interest of the plaintiffs herein and of those claiming under them in and to the use of the waters of said Goose Creek be adjudged and decreed to be prior and superior to the rights of the defendants herein and that the plaintiffs' right and title to the use of the said waters be quieted and determined.

That the defendants and each of them, their agents, servants and successors in interest, be forever enjoined and restrained from diverting or using the waters of said Goose Creek, or any of the tributaries thereof above the plaintiffs' point of diversion, and that a preliminary restraining order may issue herein and that a temporary injunction may issue pending the final determination of this

suit restraining and enjoining the said defendants and each of them from diverting or using the waters of said stream, or the tributaries thereof, and that your orators may have such other relief as the court may deem equitable and proper.

May it please your Honor therefore to grant unto your orators the writ of subpoena to be issued from the Clerk's office of this court directed to the said defendants and commanding them to appear herein upon a date to be named therein, and full and true answer to make to this bill but not under oath, an answer under oath being waived, and your orators will forever pray.

TWIN FALLS OAKLEY LAND AND WATER
COMPANY, a corporation, OAKLEY CANAL
COMPANY, a corporation,

By S. H. Hays and P. B. Carter, Their Solicitors.

State of Idaho,
County of Ada.—ss.

P. B. Carter, being first duly sworn, deposes and says that he is one of the attorneys for the plaintiffs corporations herein; that he has read the foregoing Bill and knows the contents thereof and that the same is true of his own knowledge except as to those matters therein alleged to be upon information or belief and that as to those matters, he believes it to be true.

That affiant makes this verification for the reason that all of the officers and agents of the plaintiff cor-

porations are absent from the County of Ada wherein affiant resides.

P. B. CARTER.

Subscribed and sworn to before me this 5th day of November, 1914.

(Seal.)

P. MARTIN, N. P.

SUBSTANCE OF EXHIBIT "A."

Agreement

THE STATE OF IDAHO AND TWIN FALLS
OAKLEY LAND AND WATER COMPANY

August 12, 1909.

Contract.

This agreement, made and entered into in triplicate this 12th day of August, 1909, by and between the State of Idaho, the party of the first part, through the State Board of Land Commissioners of said state, said Board consisting of James H. Brady, Governor; Robert Lansdon, Secretary of State; D. C. McDougal, Attorney General, and S. Belle Chamberlain, Superintendent of Public Instruction of said State, and the Twin Falls Oakley Land and Water Company, a corporation organized and existing under the laws of the State of Delaware and lawfully doing business in the State of Idaho by virtue of a compliance with the laws thereof, the party of the second part, WITNESSETH, that

WHEREAS, The party of the second part has succeeded to all of the rights of Samuel H. Hays, which rights are evidenced by the Proposal and Request heretofore made by him on the 15th day of June,

1908, and the amended Proposal and Request made by him on the 21st day of June, 1909, which amended Proposal and Request was approved by the State Board of Land Commissioners of the State of Idaho, on the 21st day of June, 1909, said Proposals and Requests having been made under the terms of what is commonly known as the "Carey Act" and the State legislation supplemental thereto; and

WHEREAS, There has been heretofore segregated under the Proposal and Request of date of June 15th, 1908, 43,693.56 acres of land situated in Cassia County, Idaho, described in List 23 filed in the United State Land Office at Hailey, Idaho, a copy of which is hereto attached and is hereby referred to and made a part hereof; and

WHEREAS, All of the property, rights and franchises of the said Samuel H. Hays acquired under and by virtue of the said Proposals and Requests have, with the consent of the State Board of Land Commissioners, been duly transferred to the party of the second part herein.

It is mutually agreed and covenanted as follows:

Purpose of Contract.

1. That for and in consideration of the covenants of the said party of the first part herein contained, the party of the second part agrees to construct and build those certain irrigation works mentioned and described in the aforesaid amended Proposal and Request dated on the 21st day of June, 1909, and hereinafter more particularly described, and to sell shares of water rights in said irrigation

system from time to time, as hereinafter provided, to the person or persons filing upon the lands hereinafter described, and also to the owners of other lands not described herein, but which are susceptible of irrigation from said system or from any extension or enlargement thereof, said shares or water rights to be sold on the terms hereinafter provided, and also to transfer the ownership, management and control of said irrigation system to the purchasers of shares or water rights as hereinafter set forth.

General Specifications.

2. *Dam.*—The dam is to be located in Section nineteen (19), Township fourteen (14) South, Range twenty-two (22) East, and is to be approximately one hundred and forty-three (143) feet high. The slopes are to be three (3) to one (1) up stream and two (2) to one (1) down stream. The material is to be puddled earth with a thin concrete core. The slopes are to be faced with stone to a depth of two feet. The reservoir created by this dam has been determined to have a storage capacity of approximately seventy thousand (70,000) acre feet.

Gates.—Duplicate outlet gates will be provided, each having a capacity sufficient to discharge the maximum amount of water required, and so proportioned that they can be readily operated when under maximum pressure.

Sluice-way.—The sluice way will consist of a tunnel ten by ten feet (10x10) driven through the solid rock at the east end of the dam.

Gathering System.—In order to augment the sup-

ply of water, a gathering system will be constructed, as shown upon the plans filed with the Proposal and Request of June 21st, 1909, consisting of a canal on the west side of the valley and a canal on the east side of the valley, both of which will empty into the reservoir above the dam.

The canal of the west side gathering system will have an approximate length of twelve and one-fourth ($12\frac{1}{4}$) miles. It will be approximately twenty-eight (28) feet wide on the bottom. The slopes of the banks will be three (3) to one (1); depth of water to be carried, two feet; approximate grade, five and twenty-eight hundredths (5.28) feet to the mile, which dimensions give the canal a carrying capacity of one hundred (100) second feet. The upper bank will be built only in such places as may be reasonably required. Galvanized steel flume will be used where necessary.

The canal of the gathering system on the east side will have a length of approximately ten and one-fourth ($10\frac{1}{4}$) miles, and will have the same dimensions, grade and capacity as the west side canal.

Distribution System.—The system for the distribution of the water for irrigation purposes will be constructed as follows:

The west side main canal will take water from Goose Creek in section seventeen (17), township fourteen (14) South, Range twenty-two (22) East, and will extend in a northwesterly direction to approximately Section three (3), Township twelve (12) South, Range twenty-two (22) East. At its head, it

will be of the following dimensions: Width, twenty (20) feet; depth of water three (3) feet; side slopes three (3) to one (1); grade, six (6) feet per mile; said canal has been determined to have a capacity of three hundred and twenty-five (325) second feet. It will gradually diminish in size towards the end.

The east side canal will take water from Goose Creek in Section seventeen (17), Township fourteen (14) South, Range twenty-two (22) East, and will extend in a northeasterly direction a distance of fifteen (15) miles. It will have a width on the bottom of twelve (12) feet, depth of water three (3) feet; side slopes, two (2) to one (1); grade, six (6) feet per mile, and an estimated capacity of one hundred and seventy-five (175) cubic feet of water per second. It will gradually narrow towards the end so that it may be of such dimensions as to properly serve the area to be irrigated under it.

High Line Canal.—This canal will take water from Goose Creek in Section nineteen (19), Township fourteen (14) South, Range twenty-two (22) East, and extend in a northeasterly direction a distance of eight (8) miles to a point near the northeast corner of Section thirty-four (34), Township thirteen (13) South, Range twenty-two (22) East. It will have a width on the bottom of six (6) feet; depth of water one and five-tenths (1.5) feet; side slopes, two (2) to one (1); grade, three feet per mile, and an estimated capacity of eleven and five-tenths (11.5) second feet. It will narrow towards the end so as to be of such dimensions as to properly serve the area to be irrigated under it.

Lateral System.—The lateral system will be so designed and located as to supply to the land thirty per cent (30%) of the entire water supply every thirty (30) days. The grades and cross sections of canals shall be varied to suit conditions with a view to having the necessary carrying capacity for the delivery of water under a rotation system.

Right of Way.

3. (Provides for rights of way over lands belonging to the State of Idaho or lands that may be ceded to the State by Act of Congress commonly known as the Carey Act; also that the number and location of laterals and waste ditches shall be determined by the Chief Engineer of the company, subject to the approval of the State Engineer; also that detailed maps showing location of canals, laterals, reservoir and waste ditches shall be filed with the Board and with the State Engineer; also that no compensation shall be paid to land owners for rights of way herein provided for.)

Appropriation of Water.

4. The party of the second part is the owner of those certain water rights evidenced by permit No. 3751 for 500 cubic feet per second of the waters of Goose Creek; permit No. 4734 for 300 cubic feet per second of the waters of Cottonwood Creek; permit No. 4732 for 300 cubic feet of the waters of Little Cottonwood Creek; permit No. 4735 for 300 cubic feet of the waters of Birch Creek, and permit No. 4733 for 200 cubic feet of the waters of Basin Creek,

all of said permits having been heretofore issued and approved by the State Engineer of the State of Idaho, and the party of the second part agrees to convey said water rights, together with such other water rights as it may acquire in connection with this project, to the Oakley Canal Company, hereinafter more particularly mentioned, to the end that there may be furnished and delivered to the said irrigation system and to the owners of shares therein, as specified in the other provisions of this contract, all of the said appropriated water to which the said second party may be entitled to the extent of one and one-half acre feet of water during the irrigation season, to be delivered under a system of rotation, as hereinafter provided; said water is to be measured at a point not farther distant than one-half mile from each quarter section of the lands herein described which are to be irrigated from the system. In case the measuring device cannot conveniently be placed at the point above mentioned, then it shall be so placed as the needs of the irrigation system require, but shall be so adjusted as to deliver the necessary amount of water at the point above specified.

Entry of Lands.

5. Upon the execution of this contract and when the actual construction of the irrigation system shall have been inaugurated, the said party of the first part agrees to have notice given in conformity with law for the throwing open of not less than thirty-eight thousand (38,000) acres of the lands described in List No. 23 attached hereto, said lands to be open-

ed for settlement under such regulations as to the manner of said opening as shall be prescribed by the State Board of Land Commissioners. Additional lands are to be opened for entry as rapidly as the water supply and the development of the irrigation works will justify.

Application for Lands.

6. The said party of the first part, through its State Board of Land Commissioners, agrees that it will not approve any application for or filing on any of the lands hereinafter described until the person or persons so applying shall furnish to the said Board a true copy of the contract entered into with the party of the second part for the purchase of sufficient shares or water rights in said irrigation works for the irrigation of said lands, said shares or water rights to be evidenced by the stock of the Oakley Canal Company, one share being issued for each acre of land, as hereinafter provided, and the said second party stipulates and agrees that to the extent of the capacity of the irrigation works and to the extent of the water rights to which it is entitled, as rapidly as lands are thrown open for entry, it will sell or contract to sell water rights or shares for land to be filed upon to qualified entrymen without preference or partiality other than that based upon priority of application, it being understood, however, that priority of application or priority of entry or settlement shall not give any priority of right to the use of water flowing through the canal or irrigation works against subsequent purchasers, but shall entitle the purchaser

to a proportionate interest only therein, the water rights having been taken for the benefit of the entire tract of land irrigated from the system. The priority of application upon opening days shall be determined by a system to be devised under the direction of the State Board of Land Commissioners.

Sale of Land by the State.

7. The said party of the first part, acting through its State Board of Land Commissioners, agrees to sell the lands herein described to such persons as are or may be by law entitled to file upon the same for the sum of Fifty Cents (\$.50) per acre, one-half of which sum shall be paid at the time of application for the entry of such lands made to said Board and the remaining one-half at the time of the making final proof thereon.

Price of Water Rights.

8. (Provides that second party is to sell settlers one share, representing a proportionate interest in said water rights and irrigation system, based upon the number of shares finally sold in said system, at sixty-five dollars (\$65.00) per share, to be paid, one-fifth in cash on date of agreement, and remainder in five equal annual installments, with interest at six per cent. per annum; also that for all entries made within two years from this date, the charge shall be three dollars in cash at the time of entry and the balance in twelve annual installments, with interest at six per cent. per annum; also, in case entrymen on desert lands, or homestead lands, or the owners

of any lands other than those segregated under the Carey Act, decline to purchase water rights within six months after Carey Act lands are thrown open for settlement, two dollars forty cents (\$2.40) may be added to the price of water rights for each year's delay or fraction thereof; also provides that this agreement shall not be construed to prevent the sale of water rights on terms more favorable than those herein provided for, or to prevent the payment of installments on the purchase price in advance of maturity, at option of purchaser; also provides that water right contracts and shares of stock may be issued to the owners of patented land prior to date Carey Act lands are thrown open for entry.)

Transfer of Possession and Management of Canal.

9. It being necessary to provide a convenient method of transferring the ownership and control of said irrigation system from the said party of the second part to the purchasers of water rights in said irrigation system, and for determining their rights among themselves and between said purchasers and the party of the second part herein, for the purpose of operating and maintaining said canal during the period of construction and afterwards, and for the purpose of levying and collecting tolls, charges and assessments for the carrying on and maintenance of said irrigation system, and the operating and management thereof, it is hereby provided that as soon as said lands are ordered thrown open for settlement, a corporation to be known as the Oakley Canal Company shall be formed at the expense of the party of

the second part, the Articles of Incorporation of said company to be substantially in the form which is filed herewith and made a part hereof; that the authorized capital stock of said corporation shall be seventy-five thousand (75,000) shares of the par value of one (\$1.00) dollar each, which amount is intended to represent one share for each acre of land which may be hereafter irrigated from said system. The entire authorized amount of the capital stock of said corporation shall be delivered to the party of the second part herein in consideration of the covenants and agreements herein contained, in order to enable it to deliver to purchasers, or water rights the shares of stock representing the same, said shares of stock, however, shall have no voting power and shall not have force and effect until they have been sold or contracted to be sold to the purchasers of land under this irrigation system. At the time of the purchase of any water right, there shall be issued to the purchaser thereof one share of the capital stock of said corporation for each acre of land entered or filed upon; but the said party of the second part therein shall, in case said water rights or shares of stock are not fully paid for, require the endorsement and delivery to it of said stock, and shall at the same time require of said purchaser an agreement that until fifty (50%) per cent of the purchase price of said stock has been paid, that the said party of the second part herein shall vote said stock in such manner as it may deem proper at all meetings of the stockholders of said corporation; pro-

vided, however, that the party of the second part may deliver said stock to the purchaser at its option, and surrender its right to vote the same, at any time after thirty (30%) per cent of the purchase price of said stock has fallen due. The said Oakley Canal Company shall have the management, ownership and control, as above set out, of the said irrigation system as fast as the same is completed and turned over to it for operation by the said party of the second part, as hereinafter provided. Whenever it is certified by the Chief Engineer of the Company and the State Engineer that certain portions of the said irrigation system are completed for the purposes of operation, the same shall, with the consent of the State Board of Land Commissioners, be turned over to the Oakley Canal Company, for operation, and said system or portions thereof shall be turned over for the purpose of operation, although not fully completed in all details. The transfer to said Oakley Canal Company, however, shall not in any manner lessen the responsibility of the said second party with reference to the terms of this contract, nor shall such consent upon the part of the State Board be construed as a final acceptance of such portion of such canal, it being understood that the bond given for the faithful performance of the contract shall call for the substantial completion of the entire irrigation system. It shall be the duty of said Oakley Canal Company to operate said irrigation system skillfully and effectively.

Water Rights Dedicated.

10. (Sets forth form of certificate of shares of stock in Oakley Canal Company; provides for method of delivering water to irrigators during the time the party of the second part retains control of the Oakley Canal Company; also provides that the sale of water rights to purchasers shall be a dedication of the water to the lands to which the same are to be applied.)

Management of Water and Charges for Delivery.

11. (Provides that water must be made available at a point not to exceed one-half mile measured in a direct line from each quarter section of land; that each settler shall, under the direction of the Chief Engineer of the second party, build and furnish one gate and measuring device for his own use, but all other gates, weirs and measuring devices in the main canals or main or subordinate laterals shall be furnished by the second party; that no charge shall be made to purchaser for delivery of water prior to the 1st day of March, 1912; but thereafter for each succeeding year while the second party retains control it may charge and assess purchasers of water rights thirty-five cents per acre, said sum to be due and payable on the 1st day of March of each year; that if the sum so raised shall be insufficient while second party retains control of system, to pay expenses of operation, maintenance and repair and management of system, second party shall supply deficiency; after such time actual costs of maintenance are to be paid by settlers; defines terms "main

lateral," and "subordinate lateral," and that "coulees or draws used as a lateral shall be included within these terms.")

Completion of System.

12. Said party of the second part agrees to begin work on the said irrigation system within six (6) months from the date of this contract and to complete one-tenth (1-10) of the construction work within two years from this date; that the construction work shall be prosecuted diligently and continuously to completion and that a cessation of work under this contract for a period of six (6) months after the second year without the sanction of the State Board of Land Commissioners will forfeit to the State all rights under this contract.

Second party agrees to have said canal system constructed in accordance with this contract within five (5) years from the date hereof, it being understood, however, that detailed plans and specifications of said work have not yet been completed and that such detailed plans and specifications are to be approved by the State Engineer and that, with his consent and the consent of the State Land Board, alterations and changes may be made in the plans prepared and filed.

Forfeiture.

13. It is agreed that the rights of the second party herein may be forfeited in accordance with the laws of the State of Idaho now in force and effect.

Estimated Cost.

14. The estimated cost of the proposed irrigation works is \$1,750,000.00 and the price fixed at

which water rights are to be sold for each acre of land and for which liens are hereby authorized and created against the separate legal subdivisions of land herein described is deemed necessary in order to pay the costs and expenses of reclamation and interest thereon. The existing laws under which this contract is made are understood and agreed to be a part of this contract.

Description of Lands.

15. The lands hereinbefore referred to are lands donated to the State of Idaho under and pursuant to the Act of Congress approved August 18th, 1894, and the amendments relating thereto, commonly called the Carey Act and also other lands the irrigation and reclamation of which this contract is designed to effect. The lands segregated under the Carey Act are set forth in the List herewith marked Exhibit "A" which is hereby referred to and made a part hereof.

Highways.

16. (Provides that land entries are made subject to rights of way for roads.)

Water Supply for Cities and Towns.

17. (Provides for water supply for cities and towns under certain conditions.)

Delivery of Water to Users.

18. (Provides that water shall not be delivered to persons who have not purchased water rights; also provides for delivery of water by Oakley Canal Com-

pany under a rotation system and that in case of shortage the available supply shall be delivered pro-rata to users without preference or priority.)

Mortgage.

19. (Provides that system may be mortgaged.)

Amendments.

20. (Provides how contract may be amended; that detailed plans and specifications shall be filed from time to time as the work progresses; that with the consent of the State Land Board the irrigation system may be enlarged to cover lands not under the system as at present designed.

Coulees and Draws.

21. (Provides that coulees and draws may be used as waterways when made to conform to artificially constructed laterals.)

Domestic Water Supply.

22. (Provides for delivery by Oakley Canal Company of domestic water supply when necessary outside of irrigation season, under rules, regulations, terms and conditions to be determined by it.)

Railroad.

23. (Provides that entries of land shall be made subject to right of way of the Milner & North Side Railroad without compensation to settlers for land taken therefor, but that deduction shall be made from water right for lands so taken.)

Purchase of Old Water Rights.

24. It is understood that the party of the second

part has arranged for the purchase of a large number of old water rights in Goose Creek covering between six and seven thousand acres of land, which water rights are to be conveyed to the second party and by it to the Oakley Canal Company, and inasmuch as it has been arranged with the holders of said water rights, under the terms of this contract, evidenced by stock in the Oakley Canal Company, it is agreed that stock in said Oakley Canal Company, fully paid up may be issued to the holders of old water rights in lieu of such rights on the terms agreed to between them and the party of the second part and fully paid up water contracts for said water rights may be issued and the issuance thereof is hereby approved. The amount and number of water contracts issued under this provision shall be reported to the Board.

WHEREAS, All the requirements of law have been, in so far as this contract is concerned, fully met and in every respect complied with; the execution of this contract is therefor ordered.

IN WITNESS WHEREOF, the said party of the first part, the State of Idaho, has by resolution of its State Board of Land Commissioners, caused this agreement to be signed in duplicate by its Governor, who is ex-officio president of said State Board of Land Commissioners, and attested by the Registrar of said Board.

AND, the said party of the second part has hereto caused its corporate name to be subscribed by

its proper officer and to be duly attested, as provided by resolution of its Board of Directors.

THE STATE OF IDAHO AND THE STATE
BOARD OF LAND COMMISSIONERS,

By James H. Brady, Governor and President of
said Board.

Attest: M. I. Church, Registrar.

TWIN FALLS OAKLEY LAND AND WATER
COMPANY,

(Seal.) By Jerome Hill, Jr., Vice-president.

Attest: C. W. Sheck, Assistant Secretary.

(Map of plat of Oakley Project is attached to the
exhibit.)

EXHIBIT "B."

Oakley. Contract No.....

TWIN FALLS OAKLEY LAND AND WATER
COMPANY.

Agreement.

This Agreement, Made in duplicate this....day
of....., 19.., between the Twin Falls Oakley
Land and Water Company (for convenience herein-
after called "the Company") a corporation organ-
ized and existing under the laws of the State of
Delaware, party of the first part, and.....
(for convenience hereinafter called "the Pur-
chaser"), of....., State of, party of
the second part, witnesseth:

That the Company has heretofore entered into a
contract with the State of Idaho, acting by its State
Board of Land Commissioners, whereby the Com-

pany bound itself to construct a system of canals and irrigation works for the reclamation and irrigation of certain lands therein described and referred to, which contract is of record in the office of the Register of the State Board of Land Commissioners at Boise City, Idaho, and is dated August 12th, 1909, and is hereinafter called the "State Contract."

That the Company has heretofore entered upon the work of construction of said irrigation system for the purpose of diverting the waters of various streams under the appropriations set forth in the State Contract.

That the State Board of Land Commissioners, pursuant to law and its rules and regulations, has notified the Company that it may proceed to sell or contract rights to the use of water flowing and to flow through the canals and rights to and in said system of irrigation works, pursuant to law and to the terms of said contract with the State.

That the Purchaser has made application to the Company to be permitted to purchase, upon the terms hereinafter set forth, the rights and privileges by said contract guaranteed, to the extent hereinafter named, which said application has been accepted by the Company subject to the approval of the State Board of Land Commissioners, whose approval, previous to the delivery hereof, has been by its Register endorsed hereon.

That in consideration of the sum of Dollars, cash in hand paid this day by the Purchaser to the Company and in consideration of the covenants and

agreements hereinafter contained, it is agreed in pursuance of the State contract that the Purchaser shall become entitled to.....shares of the capital stock of the Oakley Canal Company, the certificate thereof to be in the form as follows, to-wit:

OAKLEY CANAL COMPANY.

:.....Shares., 19...

This is to certify that.....is the owner ofshares of the capital stock of the Oakley Canal Company.

This certificate entitles the owner thereof to a water right of one and one-half acre feet of water for each acre of the following described land:, Section....., Township.....South,of RangeE. B. M., containing.....acres in Cassia County, State of Idaho, in accordance with the terms of the contract between the State of Idaho and the Twin Falls Oakley Land and Water Company, dated August 12, 1909, and this certificate also entitles the owner to a proportionate interest in the dam, canal, irrigation works and water rights, together with all the rights and franchises attached thereto, based upon the number of shares finally sold in accordance with the said contract between the said Company and the State of Idaho.

OAKLEY CANAL COMPANY,

By.....President.

Attest:Secretary.

Said certificate to be delivered as provided for in said State contract and under the conditions therein stated.

The water which the Purchaser shall have the right to conduct and receive through the said canal system shall be used upon and the water shall become dedicated and be appurtenant to the land above described and none other.

And the parties hereto expressly agree as follows, to-wit:

1. This agreement is made in accordance with the provisions of said contract between the State of Idaho and the Company, which, together with the laws of the State of Idaho under which this agreement is made, shall be regarded as defining the rights of the respective parties, and shall regulate the provisions of the shares of stock to be issued to the purchaser by the Oakley Canal Company.

2. The Company agrees that so long as it retains control of the Oakley Canal Company, to-wit, so long as it shall continue to vote a majority of the stock of said Company, as provided by the State Contract, that it will cause said Company to keep and maintain the said irrigation system in good order and condition and to cause any necessary repairs thereto to be made as soon as practicable and expedient.

Said Oakley Canal Company is to have power to levy all necessary tolls, charges, and assessments upon all users of water in proportion to their respective holdings of stock, whether water is used or not, and the Company hereby agrees that no charges shall be made for the delivery of water from this date until after the first day of January, 1912, and that there-

after the annual charge for maintenance shall not, during the period prescribed in the State Contract, exceed the sum of 35 cents for each and every acre, to be charged against the entire acreage irrespective of the irrigation thereof. The Purchaser agrees to pay said charges at the office of the Oakley Canal Company, on the first day of April of each year without notice.

3. The consideration for the water rights hereby agreed to be conveyed is the sum of \$....., and the balance thereof remaining due after the cash payment hereinbefore acknowledged, to-wit, the sum of \$....., is due and payable as follows, to-wit:

	DUE	Princi- pal	Inter- est	Amt.
1st Deferred Payment	Apr. 1, 1912	...	...	...
2nd Deferred Payment	Apr. 1, 1913	...	...	...
3rd Deferred Payment	Apr. 1, 1914	...	...	...
4th Deferred Payment	Apr. 1, 1915	...	...	...
5th Deferred Payment	Apr. 1, 1916	...	...	...
6th Deferred Payment	Apr. 1, 1917	...	...	...
7th Deferred Payment	Apr. 1, 1918	...	...	...
8th Deferred Payment	Apr. 1, 1919	...	...	...
9th Deferred Payment	Apr. 1, 1920	...	...	...
10th Deferred Payment	Apr. 1, 1921	...	...	...
11th Deferred Payment	Apr. 1, 1922	...	...	...

Interest from April 1st, 1911, at 6 per cent per annum, shall be paid annually, but if interest is not paid within thirty days from the date the same falls due, then in such case it shall be computed for the entire period at the rate of eight per cent. per annum.

All interest accruing prior to the date on which

notice is given to the Purchaser, or his assigns, that the Company is prepared to furnish water under the terms of this contract is hereby waived, and no notice shall be given that water is ready for delivery until 30,000 acre feet of water shall have been impounded in the reservoir to be constructed.

4. The Purchaser hereby covenants and agrees that upon default in the payment of any of the payments above specified, or of the interest thereon, or of any annual charge, toll, or assessment, for the operation and maintenance of the irrigation system, hereinbefore provided for, the Company may declare the entire amount of the principal purchase price for said water rights due, and may proceed either in law or equity to collect the same, and to enforce any lien which it may have upon the water rights hereby contracted, or upon the lands to which said water rights are dedicated, or may at its option proceed to enforce any remedy given by the laws of Idaho to the Company against the Purchaser.

And the Purchaser hereby further covenants that he will and by these presents does hereby grant, assign, transfer and set over, by way of mortgage or pledge to the Company to secure the payment of the amounts due and to become due on the purchase price of the water rights hereby contracted to be sold, any and all interest, and all rights which he now has or which may hereafter accrue to him under his contract with the State of Idaho, for the purchase of the lands to

which the water rights hereby contracted for are dedicated, and further, that immediately upon transfer to him of the legal title to said lands or any part thereof, he will, upon demand, execute to the Company in proper form, a mortgage or deed of trust with power of sale in such form as may be approved by the State Board of Land Commissioners to secure the performance by him of the provisions of this contract, which said mortgage the Purchaser hereby covenants and agrees shall be a first lien upon the lands so mortgaged, superior to any and every incumbrance in favor of any persons whomsoever.

5. The Purchaser agrees that the shares of stock purchased in the Oakley Canal Company, shall be and they are hereby assigned and transferred to the Company, and said Company and its agents are hereby authorized and empowered to vote said stock in such manner as it or its agents may deem proper at all meetings of the stockholders of said Company until not less than 35 per cent of the purchase price of said stock has been paid, as provided in the State Contract.

6. It is agreed that no water shall be delivered to the Purchaser from said irrigation system while any installment of principal or interest is due and unpaid from the Purchaser to the Company or while any toll or assessment is due and unpaid from the Purchaser to the Oakley Canal Company. Water shall be delivered through said irrigation system only during the irrigation season, between April 1st and November 1st of each year. A domestic supply

when necessary outside of the irrigation season shall be delivered under such rules and regulations and under such terms and conditions as shall be determined by said Oakley Canal Company.

7. This contract may be assigned by the Company and thereupon the payments of principal and interest, if so provided, shall be due and payable to the assignee, but the payments for tolls, assessments and charges for the delivery of water shall, unless otherwise provided, be paid by the Oakley Canal Company, and payment thereof may be enforced by it.

8. This contract is made pursuant to and subject to the Contract between the Company and the State of Idaho and the existing laws of said State.

The entry of the above described lands is made subject to the right-of-way of the Milner and North Side Railroad Company, provided it has filed the map of its line with the State Board of Land Commissioners prior to September 1st, 1909. No charge for a water right shall be made for the land taken for the right-of-way. No compensation shall be paid the Purchaser or his assigns, for such right-of-way. The right-of-way shall not exceed one hundred feet on each side of the center line of the track.

9. All notices given to second party by the State Board of Land Commissioners or by the first party hereto or its assigns may be sent to second party by mail to address hereinbefore given.

In Witness Whereof, The parties have hereunto subscribed their names, and the Company has caused

its seal to be affixed the day and year above written in duplicate.

TWIN FALLS OAKLEY LAND AND WATER
COMPANY,

In the presence of: By.....
Vice-President.

.....
Asst. Secretary.

.....
Purchaser.

..... By.....
Witnesses. Attorney in Fact.

State of Idaho,
County of Twin Falls.—ss.

On this....day of, in the year 19..,
before me,, a Notary Public in and for
said County and State, personally appeared.....
known to me to be the person whose name is sub-
scribed to the above instrument and acknowledged to
me that he executed the same.

Attest my hand and official seal the day and year
in this certificate first above written.

(Seal.)Notary Public.

My commission expires.....

State of Idaho,
County of Twin Falls.—ss.

On this....day of....., in the year 19..,
before me,, a Notary Public in and for
said county and state, personally appeared.....
known to me to be the person whose name is sub-

scribed to the above instrument as the attorney in fact of....., and acknowledged to me that he subscribed the name of.....thereto as principal and his own name as attorney in fact.

Attest my hand and official seal the day and year in this certificate first above written.

(Seal.)Notary Public.

My commission expires.....

I hereby certify that the above is a true copy of the original contract in the above matter.

Attest:.....

Assistant Secretary Twin Falls
Oakley Land and Water Company.

The foregoing contract is hereby approved, and has been registered this....day of....., 19...

STATE BOARD OF LAND COMMISSIONERS,

By.....Register.

Milner, Idaho,, 19...

For value received this contract, principal and interest, is hereby assigned and transferred to..... by authority of a resolution of the Board of Directors of the Twin Falls Oakley Land and Water Company.

TWIN FALLS OAKLEY LAND AND WATER
COMPANY,

By.....

No..... Dated.....19...

CONTRACT—TWIN FALLS OAKLEY LAND
AND WATER CO., with

Endorsed: Filed Nov. 9, 1914.

A. L. Richardson, Clerk.

(Title of Court and Cause.)

SUBPOENA AD RESPONDENDUM.

*The President of the United States of America, to
Vineyard Land and Stock Company, a corpora-
tion, and Utah Construction Company, a corpora-
tion—GREETING:*

You and each of you are hereby commanded that you be and appear in said District Court of the United States, at the Court Room thereof, in Boise, in said District, within twenty days after service hereof, to answer the exigency of a Bill of Complaint exhibited and filed against you in our said Court, wherein Twin Falls Oakley Land and Water Company, a corporation, and Oakley Canal Company, a corporation, are complainants and you are defendants, and further to do and receive what our said District Court shall consider in this behalf and this you are in no wise to omit under the pains and penalties of what may befall thereon.

And this is to COMMAND you, the MARSHAL of said District, or your DEPUTY, to make due service of this our WRIT OF SUBPOENA and to have then and there the same.

Hereof not fail.

Witness the Honorable FRANK S. DIETRICH, Judge of said District Court of the United States, and the seal of our said Court affixed at Boise in said District, this 9th day of November, in the year of our Lord One Thousand Nine Hundred and Fourteen and of the Independence of the United States the One Hundred and 39th.

(Seal)

A. L. RICHARDSON, Clerk.

(Memorandum pursuant to Equity Rule No. 12 of the Supreme Court of the United States: The Defendant is required to file his answer or other defense in the above entitled suit in the office of the Clerk of said Court on or before the twentieth day after service; otherwise the Complainant's Bill therein may be taken *pro confesso*.)

(Endorsed: No. 510. In the District Court of the United States for the Southern Division of the District of Idaho.

In Equity. Twin Falls Oakley Land & Water Company, a corporation, et al., vs. Vineyard Land & Stock Company, a corporation, et al.

Subpoena ad Respondendum.

Returned and filed Nov. 19, 1914.

A. L. Richardson, Clerk.

By E. B. Yarrington, Deputy Clerk.

George F. Sprague, of Twin Falls, Idaho, a competent and proper person, is hereby authorized to serve the within Subpoena on the Vineyard Land & Stock Co., and Hyrum Ricks, of Rexburg, Idaho, a competent and proper person, is hereby authorized to serve the within Subpoena on the Utah Construction Company.

Dated Nov. 9, 1914.

Frank S. Dietrich, Judge.

S. H. Hays, P. B. Carter, Boise, Idaho,
Attorneys for Plaintiff.)

(Title of Court and Cause.)

In Equity—No. 510.

ANSWER OF VINEYARD LAND AND STOCK
COMPANY, A CORPORATION, AND THE
UTAH CONSTRUCTION COMPANY, A COR-
PORATION, TO THE BILL OF COMPLAINT.

These defendants, for answer to the bill of complaint on file herein, say:

I.

Admit the allegations contained in paragraphs I and II of said bill of complaint.

II.

Answering paragraph III of said bill of complaint, defendants, and each of them, are without knowledge as to whether or not on the 15th day of June, 1908, or at any other time, Samuel H. Hays made application to the State Board of Land Commissioners of the State of Idaho, under the provisions of section 1615 of the Revised Codes of the State of Idaho, or otherwise, or as to whether or not said Samuel H. Hays proposed to construct certain irrigation works in Cassia County, State of Idaho, for the purpose of irrigating the lands mentioned in said paragraph III, or for any other purpose.

Defendants and each of them are without knowledge as to whether or not said Samuel H. Hays, for the purpose of irrigating the lands described therein, proposed to divert the waters of Goose Creek, in Cassia County, to the extent of 1500 feet per second of time, or to the extent of any other quantity thereof;

or as to whether or not said Samuel H. Hays requested the State Board of Land Commissioners to procure the segregation of said lands, or requested said State Board of Land Commissioners to procure a contract to be entered into between the United States of America and the State of Idaho, under the terms of what is commonly known as the Carey Act, wherein or whereby the United States of America should promise and agree to convey to said State of Idaho said lands when said state should procure the building of necessary works for the irrigation thereof, or otherwise, or at all, or as to whether or not any such proposal and request was received, or after a report by the State Engineer of the State of Idaho, or otherwise, was accepted by said State Board of Land Commissioners.

Defendants and each of them are without knowledge as to whether or not said application was afterwards, or at any other time, made for the segregation of said lands by the State of Idaho, or as to whether or not thereafter, or at any other time, the United States of America entered into a contract with the State of Idaho, wherein or whereby said United States of America promised and agreed to convey to the State of Idaho the said lands upon the state securing the construction of necessary irrigation works for the irrigation of said lands, or otherwise.

III.

Answering paragraph IV of said bill of complaint, defendants, and each of them, are without knowledge

as to whether or not plaintiff, Twin Falls Oakley Land and Water Company, was organized for the purpose of constructing irrigation works in the State of Idaho under contract with the State, or otherwise, or at all.

Defendants and each of them are without knowledge as to whether or not said Samuel H. Hays, with the consent of the State Board of Land Commissioners of the State of Idaho, or otherwise, after making the alleged proposal and request, or otherwise, conveyed to plaintiff, Twin Falls Oakley Land and Water Company, all, or any, of his alleged rights or interests; defendants and each of them are without knowledge concerning any conveyance of property or property rights from the said Samuel H. Hays to said plaintiff, Twin Falls Oakley Land and Water Company.

IV.

Answering paragraph V of said bill of complaint, defendants and each of them are without knowledge as to whether or not on the 12th day of August, 1909, or at any other time, the plaintiff, Twin Falls Oakley Land and Water Company, made or entered into a contract with the State of Idaho under the terms of what is commonly known as the Carey Act, or the legislation of the State of Idaho supplemental thereto, or otherwise; are without knowledge as to whether or not said Twin Falls Oakley Land and Water Company contracted or agreed with the State of Idaho to build or construct said, or any other, irrigation works in Cassia County, State of Idaho.

Defendants and each of them are without knowledge as to whether or not the copy of a contract attached to the bill of complaint and marked "Exhibit A" was ever executed or delivered by the plaintiff, Twin Falls Oakley Land and Water Company, or the State of Idaho.

Defendants and each of them are without knowledge as to the allegation in said paragraph V to the effect that the lands described in said contract and to be irrigated by the works therein described, are as shown and delineated on the plat annexed to the said "Exhibit A."

Defendants and each of them are without knowledge as to the allegation contained in said paragraph V to the effect that in the alleged contract between said Twin Falls Oakley Land and Water Company and the State of Idaho it was provided that the irrigation works should be constructed for the purpose of utilizing the waters of Goose Creek, under permit therein mentioned issued by the State Engineer of the State of Idaho; are without knowledge as to whether or not said State Engineer of the State of Idaho ever issued a permit for 500 cubic feet per second of water of said Goose Creek, or for any other quantity or amount thereof.

Defendants and each of them are without knowledge as to the allegation therein that plaintiff, Twin Falls Oakley Land and Water Company, has completed the construction of said irrigation works; defendants and each of them are without knowledge as to the quantity of water, if any, that was or is re-

quired for the irrigation of the lands mentioned in said paragraph V of said bill of complaint; are without knowledge as to what quantity constitutes the highest flow of said Goose Creek in high water.

V.

Answering paragraph VI of said bill of complaint, defendants say that they, and each of them, are without knowledge as to whether or not on the 27th day of March, 1908, or at any other time, said Samuel H. Hays made application to the State Engineer of the State of Idaho for authority or permission to divert 500 second feet of the waters of said Goose Creek, or any other quantity thereof; are without knowledge as to whether or not the State Engineer of the State of Idaho issued to said Samuel H. Hays permit number 3751, or any other permit; or as to whether or not the said State Engineer of the State of Idaho attempted to authorize said Samuel H. Hays, in the interest of plaintiffs, or otherwise, to divert from said Goose Creek 500 second feet, or any other quantity, of water of said stream, for the irrigation of said lands, or for any other purpose.

Defendants and each of them are without knowledge as to whether or not said, or any, permit was acquired by said Samuel H. Hays in the interest of plaintiffs, or either of them, or at all, or as to whether or not said, or any, permits have been conveyed or transferred to the plaintiff, Twin Falls Oakley Land and Water Company, for the use or benefit of plaintiff, Oakley Canal Company, and its stockholders, or either of them, or at all.

Defendants, and each of them, are without knowledge as to whether or not, on the 10th day of March, 1909, or at any other time, any person made application to the State Engineer of the State of Idaho for authority or permission to divert 1000 second feet, or any other quantity, of water of said Goose Creek for the purpose of irrigating the lands mentioned in said bill of complaint, or for any other purpose; are without knowledge as to whether or not the State Engineer of the State of Idaho at any time issued, or attempted to issue, to the predecessor in interest of the plaintiff companies, or to any other person, a certificate authorizing and permitting, or attempting to authorize them, or either of them, to divert from said Goose Creek 1000 second feet, or any other quantity, of the waters of said stream for the purpose of irrigating said, or any other, lands; defendants and each of them are without knowledge as to whether or not any permit from the State Engineer of the State of Idaho, or any rights acquired or attempted to be acquired thereunder, have heretofore been conveyed to the plaintiff, Twin Falls Oakley Land and Water Company, for the use and benefit of the plaintiff, Oakley Canal Company, and the stockholders thereof, or to either of them, for the purposes mentioned, or for any other purpose.

Defendants and each of them are without knowledge as to whether or not plaintiff, Twin Falls Oakley Land and Water Company, thereafter commenced or completed the construction of the irrigation works provided for in said permits; or as to whether or

not said works are so located as to enable plaintiffs to irrigate said lands; or as to whether or not said works have heretofore been completed; or as to whether or not the State Engineer of the State of Idaho, on the 19th day of July, 1913, or at any other time, issued to plaintiff, Twin Falls Oakley Land and Water Company, a certificate of completion of said works.

Defendants, and each of them, are without knowledge as to whether or not on the first day of June, 1914, or at any other time, plaintiff, Twin Falls Oakley Land and Water Company, made proof of completion of its works; or as to whether or not any proof of completion of works by said plaintiff has been duly approved; or that a certificate of completion of the same will be issued.

Defendants and each of them, are without knowledge as to whether or not said plaintiff, Twin Falls Oakley Land and Water Company, has purchased rights to the use of waters of Goose Creek; or as to whether or not any rights in and to the waters of Goose Creek are held by said plaintiff, Twin Falls Oakley Land and Water Company, for the use and benefit of plaintiff, Oakley Canal Company, and the stockholders thereof, or either of them, or otherwise.

Defendants and each of them deny that, as to these defendants, plaintiffs, or any of said water users, have any priority to the use of, or right to use, any of the waters of said Goose Creek, or its tributaries; that as to whether or not plaintiffs, or either of them, require the entire flow of the waters of said Goose

Creek, and the tributaries thereof, for the irrigation of said lands, or to supply the rights of said plaintiffs, or those claiming under them, these defendants are without knowledge.

VI.

Answering paragraph VII of said bill of complaint, these defendants admit that said Goose Creek above plaintiffs' alleged point of diversion is formed by various small streams and creeks having their sources in the main in the State of Nevada, and to some extent in the State of Idaho, and that these tributaries flow together in the State of Nevada, forming said Goose Creek, and that the said stream flows northward into the County of Cassia, State of Idaho, and empties into the Snake River, in said State of Idaho.

VII.

Answering paragraph VIII of said bill of complaint, defendants are without knowledge as to whether or not in any contract between the State of Idaho and the plaintiff, Twin Falls Oakley Land and Water Company, it is provided or required that said Twin Falls Oakley Land and Water Company should construct irrigation works, or that it should thereafter organize a company to be called the Oakley Canal Company, or that said Oakley Canal Company should after the completion of said works, own, operate, or conduct the same, or the water or water rights used in connection therewith.

Defendants, and each of them, are without knowledge as to whether or not the lands mentioned in

said paragraph were thrown open for settlement by the State of Idaho, or as to whether or not 400, or any other number of, persons made entries upon said lands; or as to whether or not said, or any number of, persons purchased shares of stock in the Oakley Canal Company; defendants and each of them deny that as to these defendants, plaintiffs, or either of them, or their stockholders, are entitled to use the waters of said Goose Creek for the irrigation of said, or any, lands; defendants and each of them are without knowledge as to whether or not said waters are necessary for the irrigation of said lands.

VIII.

Answering paragraph IX of said bill of complaint, defendants, and each of them, say that they and each of them are without knowledge as to whether or not at the time mentioned in said paragraph, or at any other time, either of the persons therein mentioned entered into a contract with said plaintiff, Twin Falls Oakley Land and Water Company, or as to whether or not "Exhibit B" referred to in said paragraph is a copy of any such contract.

IX.

Answering paragraph X of said bill of complaint, defendants admit that defendant Vineyard Land and Stock Company has commenced and is now constructing, and has constructed, canals and ditches in the State of Nevada for the purpose of diverting and using the waters of said Goose Creek and its tributaries; but deny that the purpose thereof is to prevent said Oakley Canal Company, or its stockholders,

from using any of the waters of said Goose Creek to which they, or either of them, are entitled; admit that it is the intention of said defendant to divert, consume and use certain of the waters of said stream before the same reach the irrigation works of said plaintiffs, as is hereinafter more fully set forth; deny that by so doing defendant, Vineyard Land & Stock Company, will prevent the use of any of the waters of said stream to which plaintiffs, or either of them, or the stockholders of said Oakley Canal Company, are entitled; deny that the rights of said defendant, Vineyard Land and Stock Company, hereinafter set forth, are subsequent or subject to the rights thereto of plaintiffs, or either of them, or of the stockholders of said Oakley Canal Company.

X.

Answering paragraph XI of said bill of complaint, defendants say that they, and each of them, are without knowledge as to whether or not the plaintiff, Oakley Canal Company, is commonly known as the operating company, or as to whether or not it is the company whose shares of stock represent water rights of the settlers upon said lands; or as to whether or not said Oakley Canal Company is the company for whose use and benefit said irrigation works were, or were to be, constructed.

Defendants and each of them are without knowledge as to whether or not said plaintiffs, or either of them, or the stockholders of said Oakley Canal Company, are the owners or holders of said, or any, irrigation works, or said, or any water rights

or permits; deny that said plaintiffs, or either of them, or the stockholders of said Oakley Canal Company, or either of them, are entitled to divert or impound any of the waters of said Goose Creek or the tributaries thereof, claimed by the defendant Vineyard Land & Stock Company, as hereinafter more particularly set forth; defendants, and each of them, say that they are without knowledge as to whether or not said waters are required for the irrigation of the lands mentioned in said paragraph XI.

XI.

Answering paragraph XII of said bill of complaint, defendants admit that the defendant, Vineyard Land and Stock Company, is the owner of lands in the State of Nevada, and in the State of Idaho; that it has designated Twin Falls County, State of Idaho, as its principal place of business in said state, and has appointed an agent therein upon whom service of process may be made; and that it has filed the designation of such agency with the Secretary of State of the State of Idaho, and with the County Recorder of said Twin Falls County; that C. B. Channell, of said Twin Falls County, is said agent.

Defendants admit that the defendant, The Utah Construction Company, is the owner of lands in the State of Nevada and in the State of Idaho, and is the owner of nearly all of the stock of the defendant Vineyard Land and Stock Company, but denies that it has control of and directs the operations thereof; admits that said The Utah Construction Company has

designated Rexburg, in the County of Jefferson, State of Idaho, as its principal place of business in said state, and has appointed I. N. Corey as its agent therein, upon whom the service of process may be made; admits that it has filed the designation of such agency with the Secretary of State of the State of Idaho, and that each of said defendants is engaged in business within said state.

XII.

Answering paragraph XIII of said bill of complaint, defendants deny that the plaintiffs, or those claiming under them, are entitled to the use or enjoyment, or the right to impound, any of the waters of said Goose Creek claimed by said defendant, Vineyard Land & Stock Co., as hereinafter more particularly set forth; deny that plaintiffs, or either of them, or those claiming under plaintiffs, or either of them, have any right to the use of said waters, or any portion thereof, prior or superior to that of said defendant; admit that said defendant Vineyard Land & Stock Co., sets up and claims, as hereinafter more particularly set forth, the right to the use of the waters of said Goose Creek, and its tributaries above plaintiffs' point of diversion, superior to the rights of the plaintiffs, and those claiming under them.

XIII.

For further answer to said bill of complaint, defendants say:

1. That at all the times in said bill of complaint mentioned, defendant Vineyard Land & Stock Co., has been and now is the owner of more than 26,000

acres of lands in townships forty-four North, to forty-seven North, both inclusive, in Ranges sixty-six East to seventy East, both inclusive, Mount Diablo Meridian, in the State of Nevada, and that the major portion of the waters of said Goose Creek arise upon and flow through said lands; that about 6,000 acres of said lands are located along and adjacent to said Goose Creek and its tributaries, and, except as hereinafter mentioned, are high and arid and unsuitable for tillage or cultivation, or for the growing of crops without irrigation; that all of said 6,000 acres of lands are so located as to be susceptible of irrigation from the waters of said Goose Creek and its tributaries, and are capable when so irrigated of producing valuable crops of wild hay, alfalfa, grain and vegetables.

2. That said 6,000 acres of lands are the only lands in the State of Nevada capable of being irrigated from the waters of said Goose Creek and its tributaries, and no more than a fair and equitable proportion of said waters would be required for the irrigation thereof; that practically all of said lands are situated within one-half mile from the said Goose Creek and the tributaries thereof, and if the waters of said Goose Creek and its tributaries were diverted to and upon said lands and used for the irrigation thereof, the same, with the exception of small portions thereof, would immediately flow back into the said Goose Creek and its tributaries, and thence down said Goose Creek into the State of Idaho; that defendant Vineyard Land & Stock Company claims the right

to the use of all of said waters of Goose Creek and its tributaries to which the State of Nevada and its citizens and land holders are entitled under a fair and equitable apportionment between said State of Nevada and its citizens and land holders, and the State of Idaho and its citizens and land holders.

3. That long prior to the date of the alleged appropriation of the waters of said Goose Creek and its tributaries by plaintiffs, the predecessors in interest of the defendant Vineyard Land & Stock Co., entered upon said streams and by means of dams, canals and ditches, appropriated and diverted sufficient of the said waters for the irrigation of approximately 2,000 acres of the lands hereinbefore mentioned, and have continuously used said waters for the irrigation of said lands, and for the growing thereon of hay, alfalfa and other crops; that for said purpose defendant Vineyard Land & Stock Co., and its predecessors in interest have diverted and used for irrigation purposes about 40 second feet of the said waters of said Goose Creek and its tributaries; that at the present time the defendant Vineyard Land & Stock Co. has under irrigation about 4,000 acres of said lands, and by means of dams, canals and ditches have appropriated and diverted of the waters of said Goose Creek and its tributaries, approximately 80 second feet of said waters for use upon said 4,000 acres of land, and in growing hay, alfalfa and other valuable crops thereon; that all of said lands are located in the State of Nevada, and are situate immediately adjacent to said Goose Creek and its tributaries, and after said

waters have been so used the same have, with the exception of comparatively small portions thereof flown back into the natural channel of said stream and thence down the same into the State of Idaho.

ANDREW HOWAT,

Residence: Salt Lake City, Utah;

HERBERT R. MACMILLAN,

Residence: Salt Lake City, Utah;

FRANK K. NEBEKER,

Residence: Salt Lake City, Utah;

N. M. RUICK,

Residence: Boise, Idaho;

Solicitors for Defendants.

(Duly verified.)

Service accepted and copy of above answer received this 3rd day of February, 1915.

S. H. HAYS,

Solicitor for Plaintiffs.

Endorsed: Filed Feb. 3, 1915.

A. L. Richardson, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

AMENDMENT TO ANSWER.

The defendants, by leave of Court first had and obtained, hereby amend their answer herein by adding thereto the following:

For further answer the defendants say that there is a defect of parties herein in that there are numerous persons not parties to said suit in Nevada, Utah, and Idaho, who have, or claim to have, rights and

interests in and to the waters of said Goose Creek and its tributaries; that the defendants are not informed as to the names and addresses of such claimants.

That complete justice cannot be done as between the plaintiffs and defendants herein, and the title to the waters of said stream cannot be adjudicated completely unless all persons claiming interests as aforesaid in and to the subject matter of this litigation are made parties to this suit.

EDWIN SNOW,
C. A. BOYD,
ANDREW HOWAT,
HERBERT R. MACMILLAN,
FRANK K. NEBEKER,
Solicitors for Defendants.

(Duly verified.)

Service of copy of above Amendment to Answer accepted this 19th day of April, 1915.

S. H. HAYS and P. B. CARTER,
Attorneys for Plaintiffs.

Endorsed: Filed April 20, 1915.

A. L. Richardson, Clerk.

By Pearl E. Zanger, Deputy.

STATEMENT OF EVIDENCE INTRODUCED
BY THE PARTIES TO SAID CAUSE AND
ALL PROCEEDINGS HAD AT THE TRIAL
THEREOF.

(All exhibits incorporated in printed transcript are appended at the end of this statement of the oral evidence.

It was stipulated by the respective parties that the Utah Construction Company owns a large proportion of the stock of the defendant Vineyard Land and Stock Company, and that such ownership constitutes the only relationship that exists between said Utah Construction Company and said Vineyard Land and Stock Company.

Plaintiffs offered in evidence Plaintiffs' Exhibit No. 1, being articles of agreement between the United States of America and the State of Idaho, dated November 13, 1908.

MR. NEBEKER: This is objected to as immaterial and irrelevant.

MR. HAYS: The list of lands is not set forth here, as it is in none of the subsequent papers, it being understood, I believe, between us that as to that point that objection is not made, the specification in detail of the list of lands.

THE COURT: The objection is overruled. In this case as in the other all adverse rulings may be deemed to be excepted to.

Said document was thereupon marked *Plaintiffs' Exhibit No. 1*.

Plaintiffs introduced in evidence Plaintiffs' Exhibit No. 2, being agreement between the State of Idaho and the Twin Falls Oakley Land and Water Company, dated August 12, 1909.

MR. NEBEKER: It is objected to as immaterial and irrelevant.

THE COURT: Overruled.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 2.*

Plaintiffs offered in evidence Plaintiffs' Exhibit No. 3, being application No. 5027, Permit No. 3751 for 500 cubic feet per second of the waters of Goose Creek, also deed from Samuel H. Hays to Twin Falls Oakley Land and Water Company, dated July 14, 1909, covering said permit, also certificate of completion of works under Permit No. 3751, dated July 13, 1913, also bond pursuant to said permit, dated the 10th day of August, 1908.

To which offer defendants objected on the ground that the same were immaterial and irrelevant. And it was stipulated between counsel for the respective parties that no objection would be made to the competency of these documents by the defendants and that no objection would be made by plaintiffs to the competency of any documentary evidence hereafter to be offered by defendants.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 3.*

Plaintiffs thereupon introduced in evidence plaintiffs' Exhibit No. 4, over the objection of the defendants that the same was immaterial and irrelevant. Said exhibit consists of application No. 6317, and water permit No. 4731, for 1,000 cubic feet per second of the waters of Goose Creek, also deed from S. H. Hays, dated May 9, 1914, to Twin Falls Oakley Land and Water Company, covering said water permit, also certificate of completion of works under said permit, dated March 18, 1915, also bond given

pursuant to said permit, dated the 15th day of August, 1909.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 4.*

Plaintiffs thereupon introduced in evidence, over defendants' objection that the same, and each of them, is immaterial and irrevelant, plaintiffs' Exhibits No. 5-a, plaintiffs' Exhibit No. 5-b and plaintiffs' Exhibit No. 5-c, being three forms of contracts for water rights of the Oakley project.

Said Exhibits were thereupon marked: *Plaintiffs' Exhibit No. 5-a; Plaintiffs' Exhibit No. 5-b; Plaintiffs' Exhibit No. 5-c.*

C. C. WILBURN, produced as a witness on behalf of plaintiffs, being first duly sworn, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley, Idaho; am Assistant Secretary of the Twin Falls Oakley Land and Water Company, and Secretary of the Oakley Canal Company.

There have been issued contracts of the character of plaintiffs' Exhibit No. 5-a covering 29,332.02 acres; there have been issued contracts in the form of plaintiffs' Exhibit No. 5-b covering 3,300 acres; in the form of plaintiffs' Exhibit No. 5-c covering 6,500 acres

Plaintiffs thereupon introduced in evidence, over defendants' objection on the ground that the same is immaterial and irrelevant, plaintiffs' exhibit No. 6.

Mr. Wilburn (continuing):

Plaintiffs' Exhibit No. 6 is a map of the Oakley

project. The subdivisions indicated by the round circles are the Carey Act lands that were advertised for sale. The small numbers within the circles are the contract numbers covering Carey Act lands. The colored area in the central portion of the project shown in diagonal lines represents the old patented lands. That is the land covered by contracts such as Plaintiffs' Exhibits 5-b and 5-c. The Carey Act lands shown on Plaintiffs' Exhibit No. 6 were opened for entry on September 20, 1909. The contracts for the acreage I have mentioned were taken between September 20, 1909 and the present time. Most of them were taken in 1909.

C. J. GRIFFITH, duly called and sworn as a witness on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley, Idaho. I am water master for the Oakley Canal Company. The water was turned in on the project on the 14th day of May, 1913. I took charge of the project on February 1, 1913.

The irrigation works comprising the Oakley project consists of a dam across Goose Creek immediately above the project where the water is turned out for irrigation. The dam is 140 feet high, built of earth with a core wall, something like 1200 feet on top. The dam is 1200 feet in length and its greatest width at the base is 750 feet. The canal system consists of a diversion from the reservoir through a tunnel about 800 feet long; it divides about a quarter of a mile below the reservoir into the main east side and main west side canals. These canals contour out

to get above the lands to be irrigated. The total capacity of the two canals is a little in excess of 500 second feet, and consists of about 120 miles of canals and laterals. Something like 50,000 acres of land is under the canal and can be served from it.

CROSS EXAMINATION:

Other than the waters of Goose Creek there are two feeder canals, one out of Cottonwood Creek and one out of Birch Creek. The Cottonwood feeder is about 12 miles long and empties into the reservoir immediately above the dam. The Birch Creek feeder is 7 miles lang and empties into the reservoir about a quarter of a mile above the dam on the east side. These, with Trapper Creek, constitute all of the water flowing into the reservoir, with the exception of Goose Creek and its tributaries. Trapper Creek is, I presume, about one-fifth the size of Goose Creek; Birch Creek is about half the size of Trapper Creek, but it has decreed water out of it to the extent of about 16 second feet. Cottonwood Creek is larger than Birch Creek, probably about half the size of Trapper Creek. This has decreed water out of it to the extent of 35 second feet which we do not get.

RE-DIRECT EXAMINATION:

Birch Creek empties into Goose Creek naturally in section 29 (indicating on map the location of Birch Creek and Cottonwood Creek). The map isn't long enough to show Trapper Creek. It comes in about the middle of the reservoir site. The reservoir is in the neighborhood of six miles long.

Plaintiffs thereupon introduced in evidence Plaintiffs' Exhibit 7 for the purpose only of showing the general location of the various points indicated on the exhibit.

Mr. Griffith (continuing) :

Plaintiffs' Exhibit No. 7 shows with substantial accuracy the location of the Oakley project. It also represents approximately the location of some of the property and ditches of the defendant's company in the State of Nevada. This map shows the general location of the water shed.

In the season of 1913 there was 11,590 acres in cultivation on the Oakley project, on both the old and the new lands. In the season of 1914 there was 17,234 acres. We estimate that in the present season there will be about 3,000 acres additional in cultivation, making a total of something over 20,000 to 21,000 acres. By old lands I mean the lands that received the waters of Goose Creek and its tributaries prior to the time the reservoir was built.

SOL WORTHINGTON, duly called and sworn as a witness on behalf of plaintiffs, testified as follows:
DIRECT EXAMINATION :

I am a farmer and merchant and have resided at Oakley, Idaho, for thirty years. I am familiar with the negotiations which led up to the construction of the Oakley irrigation project, and particularly the negotiations with settlers owning lands and old water rights under that project. I was chairman of the committee chosen by the people to negotiate the merger. The committee was formed in 1909, prior to the

making of the contract with the State for the construction of the works.

MR. HAYS: Please state precisely what that committee did in order to bring about the arrangement.

MR. NEBEKER: We object, if the Court please, as immaterial and irrelevant, and on the further ground that it appears that the contracts were entered into which consummated these negotiations inquired about here, and those contracts constitute the best evidence.

MR. HAYS: This is just leading up to that arrangement.

THE COURT: I think I will let him state very briefly what was done, and then you can go into details—upon the suggestion that it is preliminary only. It can't be of any substantive value. You may proceed, Mr. Worthington, and state briefly.

Mr. Worthington (continuing):

The committee's labor was to ascertain the amount of land that they had in actual cultivation and the purpose was to acquire an exchange from the reservoir of sufficient water to irrigate the lands that we had already under actual cultivation. We ascertained the area of the patented lands, as well as all lands under cultivation. There were 6,500 acres of cultivated lands and approximately 12,000 acres of patented lands. On Plaintiffs' Exhibit No. 6 the 12,000 acres of patented land is represented by those blocks having diagonals. Plaintiffs' Exhibit No. 5-c is the form of contract entered into with the people who had irrigated lands on the Oakley project. Contracts were issued in the form of 5-c at \$40.00 per acre.

The people owning water entered into an agreement to transfer their rights to the Twin Falls Oakley Land and Water Company in the form of Plaintiffs' Exhibit 8.

Plaintiffs thereupon offered in evidence Plaintiffs' Exhibit No. 8, to which offer defendants objected as immaterial, and irrelevant, and so far as it purports to show the conveyance of any water rights or agreement to convey any water rights to plaintiffs, on the ground that it is not the best evidence.

MR. NEBEKER: You don't contend that by this contract any water rights was conveyed to the company?

MR. HAYS: We will take that up later, but it was under this form. Of course, this does not convey anything; this is simply a blank form, but it was under these forms that conveyances were made later. We will furnish you a list, as I suppose it was understood, showing these conveyances.

MR. NEBEKER: That is correct. Then we will withdraw the latter part of the objection, the part as to its not being the best evidence.

A certain document was thereupon marked: *Plaintiffs' Exhibit No. 8.*

THE COURT: Overruled; it may go in.

Mr. Worthington (continuing):

That agreement was followed by conveyances of the water rights, in the form of Plaintiffs' Exhibit No. 9.

This exhibit was thereupon offered in evidence over the objection of defendants that the same was immaterial and irrelevant.

A certain document was thereupon marked: *Plaintiffs' Exhibit No. 9.*

Mr. Worthington (continuing):

The people on what may be called the old lands, indicated on Plaintiffs' Exhibit No. 6 by the diagonal white lines, obtain water at present from the Goose Creek reservoir under the terms of these forms of contract.

BENJAMIN HOWELLS, duly sworn as a witness on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I have resided at Oakley, Idaho, for thirty years. I am a practicing attorney there and ranching some. I have some knowledge of the negotiations relating to the transfer of what might be called the old water rights. Most of those deeds and contracts were made and signed in my office. Prior to that time the waters of Goose Creek were handled by a water master under a decree of the District Court of our county. The decree in the case of Martin Okelbery, H. M. Thatcher, et al., against C. H. Karlson and others, in the District Court of the Third Judicial District of the Territory of Idaho, in and for Cassia County, and dated the 10th day of September, 1886, was the first of these decrees for the waters of Goose Creek. The decree in the case of Mary H. Botzet against George Chapin, and others, in the same court, dated the 19th day of March, 1892, was the second decree.

MR. HAYS: We offer in evidence certified copies of those decrees. The defendants in this case were not parties to those decrees.

Q. (By Mr. Hays.) I will ask you one further question, Mr. Howells. Were all or substantially all of the water users from Goose Creek, in what might be called the Oakley district, that is, from the present site of the dam of the company northward, parties to this suit, the last one?

A. The last suit, I think, most of the water users were parties to the last decree, the last suit.

MR. NEBEKER: Just a moment. I move to strike out the statement of the witness that the parties to this suit were water owners, on the ground that it is giving a conclusion of the witness.

MR. HAYS: Well, water users then.

THE COURT: You mean by owners the water claimants?

A. Yes, sir, claimants.

MR. HAYS: Q. You also mean the people who actually used the water, Mr. Howells?

A. Yes, so far as I know.

MR. NEBEKER: We move to strike that out, if the Court please, as not the best evidence, and giving the conclusion of the witness.

MR. HAYS: If the Court please, that it not necessarily an opinion.

THE COURT: I think I will let it stand.

MR. NEBEKER: All that I desire, if the Court please, at the present time is that the record will not be bound by the statement of Mr. Howells here as to the establishment of these rights. I don't desire to delay the putting in of this testimony so long as it isn't claimed—

THE COURT: The only purpose of this testimony, as I understand, is to get the information that most of the persons who claimed or used waters from the stream were parties to this suit.

MR. HAYS: That is true.

THE COURT: Of course, the matter of use is a question of fact. Now, if he knows there were not many other users or claimants, he may so state.

MR. NEBEKER: I think the negative of it may perhaps be competent, but for him to testify that these persons who were parties to this decree were water users might raise the presumption and make a prima facie case of ownership, and I don't know whether it is the intention to put in for that purpose.

THE COURT: It won't go very far, of course, in establishing a right, of course, because he doesn't indicate the amount they used or when they began to use it, or the method of use.

MR. HAYS: Q. Were you generally familiar with conditions there?

A. At the time of these decrees?

Q. Yes.

A. Yes, I was more or less acquainted with the conditions.

MR. HAYS: I now offer in evidence the decrees mentioned.

Said document was thereupon marked: *Plaintiffs' Exhibit No. 10.*

MR. NEBEKER: These are objected to as immaterial and irrelevant, if the Court please, and on the further ground that it is not shown that any of

the parties mentioned in the decrees were the owners of any water rights at the time the decree was rendered, and particularly as to being irrelevant and immaterial as to either of these defendants, for the reason that they were not parties to this action. The objection—

THE COURT: Are there two exhibits, 10 and 11?

MR. HAYS: No, they are bound together under one cover.

MR. NEBEKER: The objection goes to Exhibit 10, including both decrees.

THE COURT: I am not sure that I understand the nature of your objection, Mr. Nebeker. I am inclined to think the decrees are both relevant and material. Whether or not they will be competent against your client is another question. They relate to a very material matter.

MR. NEBEKER: Our objection goes to the point that they would be, I take it, immaterial and irrelevant as to us until it is shown that the parties to that suit, that is, shown as to us that the parties to that suit were the owners of water rights. That is what I had in mind in making the objection. I don't object to the fact that the original decrees are not presented here.

MR. HAYS: Or the pleadings, I presume?

MR. NEBEKER: Or the pleadings. We do object to these exhibits, and each of them, as to their competency as to us in all respects except that we do not object to them on that ground, as being certified copies instead of the original decree, and the

pleadings upon which the decrees were taken, if the Court please.

THE COURT: Upon what theory can I receive them upon this objection.

MR. HAYS: If the Court please, they are necessarily a part of our title. We obtained the ownership of these various water rights, and we obtained them through the medium—from the parties or their assigns who were parties to this suit and this decree. We will have to follow it up later with other proof, as I take it.

THE COURT: You mean you simply offer them for the purpose of identifying the descriptions in your deeds?

MR. HAYS: No, we do not do that, if the Court please. We offer this as a part of the history of the transaction through which we obtained our water rights, and as a part of our chain of title. I do not understand that they object to any informality on the part—so far as not having the pleadings here, or the findings, or anything of that sort.

THE COURT: What I am trying to get at is, whether or not you claim the decree is proof of your water right which you now claim as against the defendant company.

MR. HAYS: Possibly it might not be, but we have to show through what source we obtained our rights.

THE COURT: Suppose there had never been any decrees?

MR. HAYS: Then we would have to show the facts from the users of water.

THE COURT: That is what I am trying to get at. Now, do you contend that with the decrees in you will not have to show the facts.

MR. HAYS: No, I don't claim that. I will still have to show other facts as well. This decree, of course, wouldn't bind the other parties.

THE COURT: With that admission, the decrees I think may go in. I hardly see how they will serve any useful purpose, however, other than the identification of the description in your deeds, if reference, is made to the decrees, as I infer it is from these forms you have offered in evidence.

MR. HAYS: Yes.

THE COURT: But if they are not evidence of the appropriation of water then they are not evidence of any right.

MR. HAYS: If we later prove that they had some right or cultivated some land, then the title may go through perhaps. If we fail to do so conditions might be different.

MR. NEBEKER: Then do I understand, if the Court please, that they are not offered as substitutive proof of the existence of any water rights in the parties to the suits in which those decrees were entered, or any ownership?

MR. HAYS: They are only offered as a part of our chain of title, which we propose to take up, but you were not parties to that suit. Therefore, as we understand it, you would not be bound by that decree.

MR. NEBEKER: And you don't claim that they constitute any evidence of ownership of water in the parties to the decree?

MR. HAYS: That may or may not be. That may or may not be, as will hereafter appear. It is just simply, one person has a deed to a piece of land. I can't offer only one deed at a time. I have to follow my chain of title down. I don't exactly understand—

THE COURT: I think Mr. Hays has a different conception of the function of the decree from what I had in mind. You seem to regard it as one link in the chain of title. I don't understand how a water decree can be a link in a chain of title. A decree does not confer anything upon the person to whom the decree goes that he didn't already have, presumably. It simply confirms in him a right which he claims already to have.

MR. HAYS: And it may fix, as between him and the other parties to the decree, the amounts.

THE COURT: It would of course as to the other parties, that is true.

MR. HAYS: It is in that, if the Court please, as I understand it, that it may become a chain of title.

THE COURT: I think I will let the exhibit go in, upon the express statement of Mr. Hays that he does not claim that this is binding in any way upon the defendant companies. So far as they are concerned at least, you will have to show the existence of a water right the same as if a decree had never been entered, so I think with that understanding you may proceed, and no one will be misled.

Mr. Howells (continuing):

Plaintiffs' Exhibit No. 11 appears to me to be an itemized list of the parties signing the deeds and

the several different inches or dates of water which the people were conveying to the company.

Plaintiffs thereupon introduced in evidence Plaintiffs' Exhibit No. 11, for the purpose only, as stated by counsel for plaintiffs, as showing a summary of all deeds made by claimants of the waters of Goose Creek to the company, and for the purpose of showing that said deeds conveyed to the company only such waters as were owned by the claimants at the time the deeds were made.

Mr. Howells (continuing) : Under the decree there was a conveyance of so much Thatcher water, as they called it, and so much Chapin water and so on, and Plaintiffs' Exhibit No. 11 shows the list of conveyances purporting to be made under the decree. Plaintiffs' Exhibit No. 12 is a map showing the patented lands, or old irrigated lands, in the Goose Creek Valley at the time of the organization of the new project in 1909. I think I can designate on this map the ditches then existing in the Oakley district. The points of diversion and the names were as follows: The point of diversion of the two main canals or laterals is shown in the lower part of Plaintiffs' Exhibit 12; the one running to the right or east is known as the east canal, and the one running to the left or west is known as the west canal. The Hopkins or Haywood ditch is the second ditch on the east side and lower down. It runs through section 8, township 14 south, range 22. The second ditch on the west side of Goose Creek and lower down is the Worthington-Sevier and Cummins ditch, running

down through to irrigate a portion of section 8, same township and range. Then the next ditch I notice on the map and having its source east of Goose Creek and further down, or north, is the Keplinger & Birch ditch, known in the early days there and mentioned in the decree. The next ditch I notice on the map further down on the west side of Goose Creek, and mentioned in the decree, is the Ferguson & McBride ditch. Further on down on the east side is what is known as the Tolman & Whittle ditch mentioned in the decree. Further down on the west side is what is known as the Wells ditch mentioned in the decree. Pretty well below the center of the old lands there is a dam and ditch running from the west side of the creek known as the Tolman ditch mentioned in the decree. Further on down the project and on the west side again is what is known as the Green & Homer ditch mentioned in the decree. I made a mistake as to the Wells ditch. It is further on north, running out of the east channel of Goose Creek after it spreads or forks, down near the center of the old irrigated project, and goes into what we call the island in between the two streams. The last ditch taken out is the Carson-Copper ditch. The early rights, or those which are dated furthest back in the decree mentioned, is on down some eight or ten miles below these last ditches, in township 11, range 22. They are known as the Thatcher ditch, Chapin ditch, Dunn ditch, Botzet ditch, and those names of parties mentioned in the decree. The Tinkrel ditch was further on down. It was taken out of Goose Creek

just a short distance above where the present town of Burley is situated.

O. * * * What, if you know, Mr. Howells, what was done by the people up in the vicinity of Oakley towards acquiring the rights of those people that were further north?

MR. NEBEKER: That is objected to as calling for a conclusion, and immaterial and irrelevant and incompetent.

MR. HAYS: Mr. Nebeker, that would, of course, involve only a conveyance between our own people, and I presume would not affect your rights.

MR. NEBEKER: If it isn't offered for the purpose of showing that any water rights existed—

MR. HAYS: Not at the present time.

MR. NEBEKER: —in the persons to whom you refer, I have no objection.

MR. HAYS: Not at the present time. My purpose is this, to show that the people up around Oakley purchased from the people further north their rights, and used whatever rights they had up in the vicinity of Oakley, and distributed them among themselves.

MR. NEBEKER: Whatever rights they had?

MR. HAYS: Whatever rights they had.

MR. NEBEKER: If any.

MR. HAYS: Yes. Later on we will show what those rights were, possibly.

Mr. Howells (continuing): As I remember in the spring of 1889 H. C. Haight, now dead, negotiated a deal for the Thatcher water, which was then being

used away down the valley at the lower end of the settlement, and brought the water up to Oakley settlement and distributed it, half an inch, or an inch, or an inch and a half, to the people who lived in the vicinity of Oakley, for the purpose of saving the trees and gardens.

MR. HAYS: This is just part, Mr. Nebeker, of the history of the locality.

MR. NEBEKER: You don't claim that it has any tendency to prove title?

MR. HAYS: Not until later. We hope to claim it later. We hope to make our claim through these rights.

MR. BOYD: In other words, you expect to establish the Thatcher rights later?

MR. HAYS: Yes. I am simply trying to avoid the introduction of a large mass of documentary evidence, and things of that sort.

MR. HAYS: Q. Were any of the other rights further north purchased?

A. Well, not in the vicinity of the Thatcher water.

MR. NEBEKER: If the Court please, I don't want to obstruct the trial of this case in any way; I would like to expedite it. I don't ask that this documentary evidence shall be produced here, but these questions all involve the assumption that there were water rights, and I fear that we will soon have the record charged with testimony of that character in such a way that it will be difficult for us to ascertain if some proof has not been made in this way of the existence of rights.

THE COURT: Counsel has expressly disclaimed that and of course he will be held to his disclaimer.

MR. NEBEKER: Well, with that understanding, I have no objection.

(Last question read.)

A. Yes, in the vicinity of where the Thatcher water was used. Mr. Howells (continuing): A short time after the Thatcher water was purchased by Mr. Haight, parties made arrangements and bought the Chapin water, a good deal in the same manner, and divided it among the several people up the valley in the vicinity of Oakley, Marion and Island, little settlements shown upon the map. The Tatro claim was purchased and distributed in the same way and the Dunn water and the Botzet water as mentioned in the decree. All of the water mentioned in the decree that were formerly claimed at the lower end of the valley was purchased by different parties and moved up the valley in the vicinity of Oakley and Marion.

MR. HAYS: Mr. Nebeker, as I understand it, our stipulation is to this effect, that we are the successors in interest of whatever rights those people had under that decree?

MR. NEBEKER: That is my understanding, General, yes.

MR. HAYS: So that we may confine our proof to the rights themselves?

MR. NEBEKER: To the rights themselves.

MR. BOYD: In other words, that we are the owners of whatever rights we have on our side, and that

you are the owners of whatever rights these people may have had on your side.

Mr. Howells (continuing): I first went to the vicinity where Oakley now is in 1878. I was there in 1880-81 and 88. In 1888 I attempted to distribute the waters as water master of Goose Creek. It was the driest season I have seen in that country. My duties took me over the various ditches. As far as I remember the ditches shown on Plaintiffs' Exhibit No. 12 were in existence at that time. The first decree on Goose Creek was in 1886. In 1888 I distributed the waters on Goose Creek over most all of the country shown in green on Plaintiffs' Exhibit 12. I would approximate the acreage at 6,000 to 6,500 acres; perhaps not all irrigated that year, but as much as could be with the supply of water we had. The supply was very scarce and was not sufficient to cover the entire area. All of the flow of Goose Creek was diverted at the points shown in Plaintiffs' Exhibit 12. I think every ditch was used more or less that season. I believe in 1878 there was 300 acres farmed in the vicinity of Oakley and on north down the valley at what was known as the Thatcher place. In 1879 the acreage was I think probably 400 acres. In 1880 it was increased; people were coming into the country and developing it, in small tracts at first and then increasing, and along as the settlement grew older more people came in. The chief influx of population was in 1881 and 1882. Up to the time of the influx of people in 1881, there would probably be six or seven hundred acres in cultivation.

The location and capacity of the ditches were virtually the same in 1909 as in 1888. There was very little change in the area of irrigated land between the two years. The irrigation of the 6500 acres was about the same between 1888 and 1909 and down to the present time. The waters of Goose Creek and its tributaries were used by these farmers from year to year. In 1888 and subsequent years many of the ditches were able to carry much more water than we had for them. The conveyance to the Twin Falls Oakley Land and Water Company purported to convey 8,890 some odd inches, as I remember it. That is substantially what the totals would be from that blue print. There was about 6500 acres effectively cultivated. I cannot say what the difference between 6500 and 8,890 inches represented, other than perhaps the 8,890 odd inches of decreed water indicated that the parties making the deal thought some of the water was of little value by reason of it being only flood water or high water. Prior to the construction of the reservoir system the people began irrigation as soon as possible in order to get their hay lands, alfalfa lands, and so on, irrigated up as early as possible in the spring.

It was stipulated between counsel that the Oakley lands were all originally arid in character and that they require one and one-half acre feet, as provided for in the State and Settlers' contracts for their proper irrigation.

C. J. PARKINSON, duly sworn as a witness on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I reside at Burley, Idaho. I first went to Oakley on the 13th day of March, 1882. I was there during the years 1883, 84, 85, 86 and 87. In 1882 and 83 I should judge there was possibly 1500 to 2000 acres under cultivation. There was not much difference in the ditches and the old claims between 1882 and 1883 up to 1900. The ditches were practically all out the same as at the present time. That is they were already built. There were two canals taken out after 1883. I think they were started in 1883. Two canals, one on the east side and one on the west side of the creek, were taken out under what is called the present reservoir in 1883. There were other old ditches built before that time. They appear marked in red on Plaintiffs' Exhibit 12.

CROSS EXAMINATION:

I had nothing to do with the construction of any of the ditches. I helped to construct one ditch onto a piece of land in 1882, but outside of that I had nothing whatever to do with the construction of the ditches. The last four years was the only time that I have had land in that vicinity. I rented some land before that time. Oakley was my home. I was not engaged altogether in farming; I was riding part of the time. I should judge there was 1500 to 2000 acres under cultivation at Oakley in those early years. I was there right along during threshing. I have been over the ground. I did not look at it for the purpose of determining how many acres there were. I could not say how many pieces of land I have meas-

ured. The ditches that were constructed in 1883 were larger than the ones constructed prior to that time. I couldn't tell how much larger they were. They were calculated to carry sufficient water to irrigate the land, but I cannot tell the difference in size.

C. J. GRIFFITH, heretofore duly sworn as a witness on behalf of plaintiffs, being recalled, testified as follows:

DIRECT EXAMINATION:

I visited the Upper Goose Creek country in 1913 and 1914. Plaintiffs' Exhibit No. 13 is a map or diagram representing in a general way the Upper Goose Creek district.

Plaintiffs thereupon offered in evidence Plaintiffs' Exhibit No. 13.

Mr. Griffith (continuing): Plaintiffs' Exhibit No. 14 is a picture taken of the Rancho Grande, in the south end, looking up the valley. It was taken on the hill immediately south of the old Grande Ranch, on the east side of the stream.

Plaintiffs thereupon offered in evidence Plaintiffs' Exhibit No. 14.

Mr. Griffith (continuing): It was taken August 26th or 27th, 1914. There is a ditch along the right hand side of the picture, where there appears to be a row of willows. There are groups of willows down through the foreground and to the left of the picture. Goose Creek splits up above there and there is two channels; one channel I believe they call a slough. The level land in the foreground they have

a natural grass which they cut for hay, most of it. Plaintiffs' Exhibit No. 15 is a photograph of part of the Grande Ranch looking to the north and mainly that part showing where some new development has taken place. The ground was in grain the past two years. This land is indicated in red at the south end of the Grande Ranch on the west side of the creek on Plaintiffs' Exhibit No. 13. This photograph was taken August 26th or 27th, 1914. The ground at the foot of the hill, at what might be called the middle of the picture, is the same ground as is marked in red on the west side of the river at the Grande Ranch.

Plaintiffs thereupon offered in evidence Plaintiffs' Exhibit No. 15.

At the request of counsel for plaintiffs the witness thereupon marked with a cross on the photograph the place representing the ground marked in red upon Plaintiffs' Exhibit No. 13.

Mr. Griffith (continuing): The ground marked in red on the west side of the stream on plaintiffs' Exhibit No. 13 was apparently new development when I first visited Rancho Grande in 1913. It was in grain and I couldn't say that it was new development, as I had never been there before. I would estimate it to be about 30 acres. When I visited the Wine Cup Ranch on the 20th, 21st and 22nd of June, 1913, I found the land indicated here in yellow, mainly on the east side of the creek, to be apparently meadow land. There was no special preparation made to irrigate the ground in the way of

old ditches. There was apparently a new ditch that had been made a little higher up on the hillside from which some water was being turned onto this meadow. In 1913 there wasn't as much development on that land as there was on the later trips. I presume, as I recall it now from my reports, there was about 40 or 50 acres in this land here, mainly on the east side of the creek. There was a ditch there taken out of Goose Creek above what is commonly called the Narrows, and came down and skirted the hill and followed the contour line down around above the grain. I would say the ditch was about a mile long. I didn't measure it. About 40 or 50 acres was under cultivation under it in 1913. It was apparently a new ditch. After you leave the turn of the river here there was apparently a new ditch that took a contour line on the north side of the creek and extended down for a distance of about two and a half miles. No sage brush was cleared under it and at that time no evidence of any water being run at all. There was no cultivation. That area is marked in blue on the map. However, in the area marked in blue there is another diversion taken out of Goose Creek on the south side, apparently a new ditch, a mile and a half long and up to that time no diversion had been made in that ditch. There was no dam in the creek at that time. There was no cultivated land under it. Up Little Goose Creek another ditch was made and some land cleared, but nothing was under cultivation. That is the development shown in red in section 25. There was no old cultivated lands there

at all. The character of the herbage was sagebrush and greasewood. I have pictures of section 25, taken in 1914. Plaintiffs' Exhibit No. 16 was taken about August 25th or 26th of that year, and represents the north line of the tract and part of the fields here, showing the grain growing on it, and the ditch as it was then built. There was no cultivation on this land that I know of in 1913. It was cultivated for the first time in 1914. Prior to that time it had been in sage brush.

Plaintiffs thereupon offered in evidence Plaintiffs' Exhibit No. 16.

Mr. Griffith (continuing): In that tract in section 25 I estimated there was about 75 acres in cultivation as new development under that ditch. Plaintiffs' Exhibit No. 17 is a photograph taken from the south side of the valley, looking almost directly north, and shows the ditches on both sides of the valley.

Said exhibit was thereupon offered in evidence.

Mr. Griffith (continuing): Plaintiffs' Exhibit No. 18 is a view of the diversion of this south side ditch in this location, that is in section 19, out of Goose Creek. It shows the head of the ditch.

Said exhibit was thereupon offered in evidence.

Mr. Griffith (continuing): Plaintiffs' Exhibit No. 19 is a photograph representing practically what I would take to be the head of this ditch on the north side of Goose Creek, taken out in about section 19. There are some 500 acres under these new ditches in sections 19, 20 and 21, 46, 69. None of that land has been cropped. Water has been diverted onto it

in small quantities. I haven't any pictures of the Old Springs Ranch. I have some of new developments there. Plaintiffs' Exhibit No. 20 is a photograph representing the diversion of this new ditch leading out onto the new land. It shows the creek, the dam in the creek there, and the water being diverted. The photograph was taken August 26th or 27th, 1914. There had been no cultivation under that canal.

Plaintiffs thereupon offered in evidence Plaintiffs' Exhibit No. 20.

Mr. Griffith (continuing): That canal was built when I was first up the creek in 1913. I don't know when the canals in sections 19, 20 and 21 were built. They were there the last of June, 1913. The canals in section 15, shown in the picture were all new canals. Plaintiffs' Exhibit No. 21 is a picture of the land under this ditch here and shows the general character of the land in section 15. That is the ditch you see running through the middle of the picture. Plaintiffs' Exhibit No. 22 is a picture of the Wine Cup ranch, taken from the extreme north end, looking south directly down over the country.

The witness thereupon marked a cross on the picture indicating the south end of the area marked in red on Plaintiffs' Exhibit No. 13.

Mr. Griffith (continuing): There is quite a little difference on the two sides of the creek. Plaintiffs' Exhibit No. 23 is a photograph representing the Wine Cup ranch and the break of the canyon into the flat and is the extreme upper end of the Wine Cup,

looking from the east side to the west side. The new development on the Grande Ranch is represented in red on Plaintiffs' Exhibit No. 13. There are approximately 30 acres of it. It was in cultivation when I first saw it in 1913. I estimate the new development on the Wine Cup, that is, what appears to me to be new development, to be from 150 to 160 acres; that is the upper end of the Wine Cup, marked in red. Going to the land in section 25, there was about 75 acres in crop last year. There is, I presume, 115 or 120 acres under ditch at the present time. That was in crop for the first time last year. Going to the lands in sections 19, 20 and 21, 46 north, 69 east, on the north side of the river, the land that could be covered from the ditch that is built there now is about 400 acres. None of it is in cultivation. The land that could be watered from the ditch is, I presume, 100 acres. I don't know when that ditch was built; it was there in 1913. Going to the Spring Creek ranch, it would be a little hard to estimate the amount of land that could be watered from that Spring Creek ditch, on account of the possible extension and watering from the end of the ditch that is built there now. The land that is now covered, without any further ditching, I presume would be 75 or 80 acres, but it is capable of quite an extension. There is no crop there; it is in sage brush. Going down to the area in sections 24 and 19, opposite the mouth of Hardester Creek, there is a new diversion taken out of Jay Creek, which runs down fully a mile on a contour. The sage brush was not cleared

last time I was there in the fall of 1914. All of the water has been diverted a part of the time at least, and run into the sage brush. In regard to the new development in sections 17 and 19, and north of Hardester Creek in 47, 7, there is what appears to be a new ditch that was there the first time I was up the creek. However, there was no diversion made in June, 1913, but upon a later visit that year a diversion was made and there was some water running in this ditch, wasting from the end or from the breaks in the ditch itself. The land is all sage brush and up to September 1st, 1914, the brush was not cleared and no development on it. This area is in the neighborhood of 200 acres. It is rather narrow in a good many places and hard to estimate without a survey.

CROSS EXAMINATION:

In speaking of new development I have reference to the appearance of the ditches I saw in 1913. I could tell where new ditches had been constructed and where old ditches had been cleaned out. I would be willing to state that all of the ditches I have spoken of as new ditches have not been constructed over two or three years; that is from the appearances as I saw them. I found four old ditches on the Rancho Grande. On the Wine Cup field I found partly in the slough, on this slough, on this side, right in there, apparently an old ditch; lower down it was apparently a new ditch. Outside of a couple of sloughs I only saw one ditch that I could say was an old ditch on the Wine Cup field. I couldn't say whether the

sloughs had been used as a part of the system of irrigation. I saw one dam in a slough down about here (indicating on map). It apparently was the head of this ditch on the north side of Goose Creek around the turn. I saw very little timothy on the Rancho Grande or the Wine Cup. I saw no alfalfa. I made no measurements for the purpose of arriving at a conclusion as to how many acres have been irrigated on the Rancho Grande or the Wine Cup field. There was an old meadow on Jay Creek, but there no ditches built to it. It was simply a swamp. There were no ditches in evidence. There was a well defined channel extending from Jay Creek into Goose Creek. I walked up the channel. The meadow near the mouth of Jay Creek contains about two or three acres. I did not see any old ditches on Spring Creek. The old ditches were up above where I was. I simply saw the new ditch and didn't go up to the old ranch. There was some water in the Jay Creek ditch the first time I was there. That is in the creek itself. The diversion of Jay Creek was not made in 1913 when I was there. What water there was was running in the old channel down to the creek, but on a later date that creek was dry; the diversion was made.

C. J. PARKINSON, heretofore duly sworn as a witness on behalf of plaintiffs, being recalled, testified as follows:

DIRECT EXAMINATION:

I was on the Wine Cup in September, 1886. At that time there was land irrigated only by high wa-

ter. There were no ditches on the place. The same was true of 1887, 1888 and 1889.

CROSS EXAMINATION:

In the years I called counsel's attention to I was up and down the creek riding. I was working for the Jews Harp Company. The property of that company is about 20 or 24 miles below the Rancho Grande. When I saw the Wine Cup it was while I was riding the range and passing by. The observations I made in these years to see whether there was any ditches was just riding through it. I think I would not have any interest in that matter at that time. It didn't make any difference to me whether there were or were not ditches. I had no occasion to make any observations for that purpose. There were not any ditches that I saw at that time. I mean that in riding casually by those ranches I didn't see any ditches.

RE-DIRECT EXAMINATION:

In riding by I could see all the ditches there were. I would ride up along the creek through the meadow land.

C. A. McCLELLAN, a witness duly sworn on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley; am employed as engineer and hydrographer for the Twin Falls Oakley Land and Water Company; have been in the engineering business since August, 1904; have been engaged in the measurement of water specifically since 1910. I am familiar with the records kept by the company joint-

ly with the Government with respect to the flow of Goose Creek, Birch Creek, Cottonwood Creek and Trapper Creek. The total discharge for Goose Creek for 1914 was 64,740 acre feet. That includes Goose Creek and Trapper Creek combined. The guage at which these measurements were made is about 12 miles above the town of Oakley, and probably 30 miles north of the Grande ranch. In 1914 we received from the Birch Creek feeder canal 1,852 acre feet; from the Cottonwood feeder 2,780 acre feet, making a total of 4,632 acre feet, outside of what we received from Goose Creek and Trapper Creek. From Trapper Creek we received 13,381 acre feet and from Upper Goose Creek 59,359 acre feet. In 1913 we received from Trapper Creek 10,785 acre feet, and from Upper Goose Creek 40,130 acre feet. Water was received from no other source. In 1912 we received from Trapper Creek 14,200 acre feet; from Upper Goose Creek 59,800 acre feet, total 74,000 acre feet, and nothing from Birch or Cottonwood Creeks. In 1911 the total from Trapper and Goose Creek together for that period was 49,170 acre feet. Nothing was received from Birch or Cottonwood Creek. For the years 1909, 1910, 1911, 1912, 1913 and 1914, the average flow of Goose Creek for the month of January is 53.3 second feet; February 90.7 second feet; March 150.5 second feet; April 158.9 second feet; May 202.3 second feet; June 124.8 second feet; July 54.3 second feet; August 26.8 second feet; September 26.9 second feet; October 32.3 second feet; November 41.1 second feet; December 39.6 second feet.

Plaintiffs thereupon rested.

E. C. McCLELLAN, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I have followed the occupation of surveying since 1878, principally in Nevada, and some in Utah, Idaho, California and New Mexico. I first visited the Rancho Grande in 1883. I was on Goose Creek in that section in 1881. The first time I was there I was assisting in sectionizing the country under Government contract. In 1881 I think I was there about a month or six weeks on the head waters of Goose Creek, both above and below the Rancho Grande. At that time in the Wine Cup place there was an old cabin and corral, and some lands were being irrigated, or had been. Mr. Armstrong' claimed the range. There wasn't anything at the Rancho Grande. I believe I did a little leveling for ditches on the Rancho Grande in 1884. The first selections of land I made was in 1883. I surveyed and selected land on the Goose Creek at Rancho Grande and also at other points upon branches of Goose Creek, for Sparks & Tinnin. In 1883 I selected lands on what is called Willow Creek and down at the Wine Cup. The Rancho Grande was just fenced at that time. The upper field was fenced that fall. Defendants' Exhibit No. 1 is a map I prepared yesterday from information secured in part in 1889 and in part I think it was in 1892 and 1895. The data for the irrigated lands and ditches was secured principally in October, 1889. I secured the data in 1899 showing

the fence line on the east side and some of the fence line on the west side. I did not secure any data for fence lines at Rancho Grande. The lead pencil lines indicate about the location of where I believed the old fence was, but it was not correct. The other lines appearing on Defendants' Exhibit No. 1, with the exception of the extreme southerly line extending across the northeast quarter of section 11, and also the westerly line of fence extending along the west side of the creek in a northwesterly direction in the southeast quarter of the northeast quarter of 11, up into the southwest quarter of the southeast quarter of section 2, of 46, 68, are reasonably correct. The south and the west line were simply sketched in by guess work. The heavy dark line extending from north to south labelled "Big Goose Creek," represents the channel of Goose Creek. A part of it is located from actual survey. The points where it crosses the section lines and where there is a diversion of ditches or sloughs, and the points at the Rancho Grande field around the house, are indicated there correctly. The heavy shaded lines around the quarter section, or forty acre tracts, extending on both sides of the creek, indicate the property lines. On Defendants' Exhibit No. 1 at the upper end in the northeast quarter of the northwest quarter of section 25, 47 north, 68 east, just below where the fence crosses the creek, there was a rock dam and a ditch taken out on the east side, extending in a southwesterly direction into the west half of the southeast quarter of section 25, towards the east side of that eighty

acre tract and following down along the line of the section about three-quarters of a mile long. The survey of that ditch was made towards the 1st of June, 1886. There had been originally a rough dam towards the center of section 35 which threw the water over onto the southerly part of this tract. The ditch that was constructed in June, 1886, commenced at the upper end of the field and extended southeasterly and was about six feet wide on the bottom and in the upper part was nearly four feet deep, coming through a short cut, and then it reached the surface of the ground in about 200 feet and from there had a grade of about eight feet to the mile until it reached the east side of the fence. That is as far as the ditch was constructed on that southeast quarter, and it was about six feet wide by a foot or a foot and a half deep. Later plow furrows were extended along the side of the fence and that extended the ditch. I located that ditch and assisted in constructing it. We began in the first part of June, 1886 and ended by the middle of June. The water was thrown out by the middle of June that season and irrigated the land on the east side of the creek in section 35. I haven't got the exact acreage. I have the total acreage of the fields, but not on either side. I think the dam was put in when the ranch was first started in 1882 or 83. It was an old dam when I went there and threw water out and irrigated almost the entire west side of the bottom land in section 35. The land was gravelly and sandy soil. The crops produced were timothy and alfalfa. There was

a small piece of native grass meadow at the mouth of Willow Creek that was in about the southeast quarter of the southwest quarter of 35, perhaps 5 or 10 acres. There was no natural meadow on Rancho Grande, except at that one place. The next ditch commenced in the northerly part of the northwest quarter of the northeast quarter of section 2, just below the cross fence, and was taken out and extended along the east side of the bottom, past the house, through section 2, and the extreme lower end was in the northwest quarter of the northwest quarter of section 12, near the west side of the same township and range. I think it was a mile and 19 chains long. I surveyed that in June, 1886, and I saw the ditch the first time in 1889 when it was constructed the full distance. It was about eight feet wide on the bottom, a foot and a half deep at the upper end and perhaps five feet wide and a foot deep at the lower end. The land that is irrigated from that ditch is shaded a darker shade from the ditch to the creek, on Defendants' Exhibit No. 1. The land irrigated from the first ditch that I mentioned is indicated by the same shading. The Rancho Grande property, as shown on Defendants' Exhibit 1, extends from the northern end of section 35, 47, 68, in a southeasterly direction, the lower part of it being in the southwest quarter of the northeast quarter of section 11, same township and range, a distance of a little over two miles. The next place below that is what we call the Wine Cup field. The upper end of that field is in the northwest quarter of section 13, or the south

half of the southwest quarter of section 12, and extends in a southeasterly direction about two miles in length. I know of other ditch construction on the Rancho Grande. There is a slough that starts out from the southwest quarter of the northeast quarter of section 2, and extend down past the house on the east side of the creek, and a ditch was taken out, I understand, in 1888; I saw it first in 1889. The ditch was taken out on Meadow Creek in the west side of the bottom in the southeast quarter of the southwest quarter of section 35, and extended in a southerly direction on the western side of the bottom. Another ditch was taken out just below the cross fence in the north center of section 2 and extended in a southwesterly direction and dropped into a swale or slough, and that was cleaned out and enlarged in places to carry water along the west side of the southeast quarter of section 2, and extended down and across the lower fence line that was below the house. The lands irrigated from that slough and ditch are on both sides of the creek at Rancho Grande. There were no other ditches constructed on Rancho Grande in those early days that I can recall. Later on I laid out two other ditches. Later on there was a little more work done. In 1900 or 1901 I was at Rancho Grande and found that there had been a ditch taken out from the upper end of the upper field, extending southwesterly from this stone dam and head of the ditch that I had put in, and carried along the fence. It was about half a mile long and was dug between 1889 and 1901. An additional area of about ten

acres was irrigated from that ditch. It was largely used as a substitute for the ditch that was constructed in 1886. There was considerable alfalfa and timothy. Alfalfa was put in on the upper field on the east side of the Rancho Grande in 1886 and was irrigated from the ditch that was taken out the 1st of June. I think there was about 25 or 30 acres. Prior to 1886 there had been timothy and I think red top sowed on the ranch at different places, principally in the upper field, also in the pasture or house field. In the two upper fields there were some crops grown and harvested there in 1883. There was a stack of hay there in that year when I went there, and I am positive there was hay cut at Rancho Grande from 1883 on. In 1894 when I was there the land had been irrigated from the ditch on the east side and they were clearing off the sagebrush that was partly dead and putting it into alfalfa and timothy. In 1886 part of the Winecup field was fenced and had a dam put in the southeast quarter of the southeast quarter of section 11, township 46 north, range 68 east that turned the water out into a slough. The dam had washed out and I had it reconstructed. The slough extended south of east for over a quarter of a mile along the east side of the bottom, and near the point where it turned from an easterly course to a southeasterly course I laid out a ditch and it was constructed and took the water out and carried it into the field and from there it was spread out onto what you might call the island between the creek and the slough. There was also another ditch taken out in

the west side that I note in the diary that I kept that year, but I have no recollection as to just where it is and I did not make any sketch of it at that time. This ditch is not shown on the map. It was somewhere below this slough in the southeast of the southeast of 11, and extended along the west side of the bottom. When I was there in 1889 I went for the purpose of locating the land that had been placed under irrigation up to that time. I noticed the ditch that was taken from the slough running down to the land on the east side, but I did not notice the other ditch. There were no other ditches constructed on the east side that I know of. The west side of the creek had been irrigated by putting dams in the creek. In 1889 I made a survey of the land that was under irrigation and there was about 269.2 acres. It was located in the east half of the northwest quarter, and the west half of the northeast quarter, and the southeast quarter of section 13, and in the northeast quarter and the north half of the southeast quarter of section 24, township 46 north, range 68 east. The character of the crop that was grown there was, according to my recollection, native grass. I am not positive that there was any timothy or red-top in there. When I was there in October, 1889, the grass was pretty well dried up, and you couldn't hardly tell what it was. In 1889 there was 428.2 acres under irrigation at Rancho Grande. In the upper field it was pretty well under irrigation and they had alfalfa, timothy and red-top there. They used it generally for pasture for their horses a good part of the time.

In the lower field in 1889 I am reasonably positive there was nothing but irrigated pasture there. In the upper fields the alfalfa died out and timothy and red-top took its place when I was there in 1900. I didn't see any signs of alfalfa at that time. In the extreme lower part of the ranch there had been alfalfa and timothy planted in 1894, and the alfalfa was dying out and timothy and red-top taking its place. In the pasture field it was almost entirely native grass.

I think it was in 1904 that I laid out ditches on Spring Creek. I don't know whether they were constructed or not. I established a weir at the lower end of the field for measuring the water. In 1889 and afterwards the lands in the Rancho Grande and Wine Cup were flooded just as is done in other parts of that range and other places in the valley. I did not observe as to when the irrigation commenced and when it ended. By the flooding system I mean that the dams were fixed up or established in the channel and as soon as the water commenced to raise in the spring it would spread out over the ground and be allowed to run until haying time, when it was turned off. Of course the parties would spread it on the ground better than it would run naturally, but they would see that it covered as much of the ground as possible and as much of the time as possible until haying. I would say that that sort of irrigation took place all over all areas in the shaded parts of defendants' exhibit 1, as early as 1889. In 1886 when I laid out the ditches I would say that at least four-

fifths of the upper field and two-thirds of the middle field were under irrigation by that method; also a little in the lower field. In 1886 the Wine Cup field was placed under a little better irrigation than it had been by fixing up the dams and throwing water into that slough and taking a ditch out of the upper end of the field. After these things were done in that year the amount of land irrigated at the Wine Cup field would be about the same as I have stated for 1889. The work I did in surveying and levelling ditches in 1884 simply consisted in levelling from the creek out a ways to see if dams were put in, whether they would throw the water out, and not with the intention of constructing any ditches. There wasn't any construction followed those surveys, that I know of. There were dams there in 1884. There were two dams that I remember of in Goose Creek in the upper field; one was the one I have already mentioned in the extreme upper end of the field, and the other one was very near the center of section 35. That threw water out on the east side of the bottom, covering the lower end of the upper field. The dam in the upper end of the field threw water out on the west side and practically covered all of the west side of the bottom. The water taken out in that way covered altogether about 221.5 acres in the upper field. That was as I saw it in 1889. I would think there would be 160 acres in the upper field irrigated by those dams that were used in 1886. The crops produced were native grasses principally, but it appears to me there was timothy and red-top and some rye grass

on the east side. In 1886 I noticed a dam placed in the house field about half way from the house up towards the cross fence. Prior to 1886 there was some of the land irrigated in the south field; it is now the middle field. There would be about 50 acres. Sparks & Tinnin had charge of the ranch when I went there in 1886 and they afterwards conveyed the property to the Sparks-Harrell Company. I did this work for Sparks & Tinnin. They constructed the ditches.

CROSS EXAMINATION:

There is a section corner at the northeast corner, at the northwest corner, at the southwest corner and the southeast corner of section 35. In 1886 I found the quarter-section corner on the east side, but I don't remember looking for one on the west side. I found a quarter-section corner on the north side. I never found the quarter-section corner on the south side, except that when I first went there in 1883 there was a small stone set in the meadow. I did not place all of them; my partner, Col. Munroe, was also there. None of the interior lines are surveyed lines; they are just drawn on in the regular way provided by the Government. The line of the stream between the northern boundary and the southern boundary is not a surveyed line at all, except I found the place where it crosses the north line and where it departs at the south line, and sketched in between the two points. I surveyed the river in there on one or both sides and located the stream and sketched it in. I have the sketch. I can't be positive just what I did do in surveying the river across there from the north

to the south line of section 35, but my recollection is that I started from the quarter-section corner and first located the north corner of the field and went across and located the creek. I had a transit and stepped it. I was alone. Then I went south from that corner and I think I went a quarter of a mile south, then stepped west and located the creek and stepped east and located the ditch. Then I went south $26\frac{1}{2}^{\circ}$ east across the southwest quarter of the northeast quarter of 35. The $26\frac{1}{2}^{\circ}$ brings you to a point just 20 chains south and 10 chains east. I took a direct sight across on that course and stepped off the distance; and then from that point I stepped east and west. From the center of section 35 it is about 17 chains from the river to the ditch on the east side. I arrived at that by stepping the distance. The note I have of it is right here on the sketch. The sketch hasn't any figures at all, but it is marked off into squares, 5 chains square. I located the whole thing that way in October, 1886. I pursued the same course all over the whole range, Salmon River and Thousand Springs. I never took the course and distance of any of these ditches from the point of diversion down along the exterior lines. None of the ditches marked on the map were ever surveyed by me in that way. I laid out the ditch marked highest up at the top of the map in 1886 and I found it there in 1889 constructed. It was constructed before 1889. In 1886 I saw the ditch already noted as starting from the upper end of the field and extending northeasterly along the east side of the field. I assisted

in building it. I wish to make a correction. The upper ditch I laid out in 1889 and the next time I went to the ranch I found it was constructed. On the west side of section 35, in the center, it is a quarter of a mile between the river and the ditch. None of that land was under cultivation in 1881. The first ditch I remember seeing was the one I assisted in constructing in 1886. It was finished between the 1st and the middle of June. The end of the ditch at that time was in the southwest quarter of the northeast quarter of section 35 and was about half a mile in length. It was continued by simply a plow furrow, I should judge from the appearance, carried along the fence line. I first saw the plow furrow in 1889. I saw a ditch in 1900 or 1901 that was constructed along the fence along the west side of the creek and carried to the west side of the bottom land, but I am not positive when it was constructed. It took the place of a slough that started out from the creek above the fence line and extended along the west side. I saw the ditches on the east side in 1886 and 1889 and on the west side in 1889, and I think the next time was in 1894 and 1900 or 1901. I was over there in 1896 but I paid no attention to ditches. I was laying out fence lines. I have not been there since that time. In the middle field on the east side the first ditch I can recollect seeing was in 1889. There were two ditches there then. I noted the ditches on the west side in 1889. I was there for the purpose of collecting information about irrigation and irrigable lands on

those ranches. I first saw the ditch in the lower field in 1889; am not sure that I saw it in 1886 constructed the whole distance or not. That ditch is the one marked on the east side of the bottom, starting from the northerly part of section 2, and extending down into the northwest quarter of the northwest quarter of section 12. The other ditch that I saw there in 1889 was one about less than a quarter of a mile above the house, taken out of a slough and extending along the east side, coming down into a little garden they had there and into the corral. There are two sloughs shown on the map; the one on the west side in the upper field is continued on the west side of the house field; the one on the east side of the house field extends down between the house and the creek and down into the lower field, about half way. The slough on the west side in section 35 originally commenced in the river in the extreme north side of section 35 and extends completely down the west side. There were no willows on it during my time. I first saw ditches on the Wine Cup in 1886. The first one starts in the extreme south side of the southeast quarter of the southwest quarter of section 12, 46, 69, and extends in a southerly direction. It was perhaps an eighth of a mile long. It came out of the slough and carried the water on the high ground on the island between the creek and the slough. It dropped into the old road that extended along there and was distributed by putting dams in the road and throwing the water out on each side. The only slough I have noted on the Wine Cup field is the one that

I have already mentioned as starting in the southwest quarter of the southwest quarter of section 12, and extending along the east side of the bottom. The pencil lines I have marked along there as the upper part of the irrigated land where the water commenced to spread out. They do not represent the northern end of the irrigated land. The line running down there on the west side of the Wine Cup is the westerly end of the irrigated lands as I noted it in 1889. It is neither a slough nor a ditch.

I have simply marked the main water courses as the Big Goose and the Little Goose. As far as the irrigation development is concerned I have either marked it ditch or slough. The land on the west side of the Wine Cup ranch was irrigated by one or two dams in the creek. They put rock dams in there. The east side of the Wine Cup was irrigated entirely from this slough, except that down towards the southeast quarter of section 13, the dam somewhere in that locality, might have thrown some water out on the east side as well as on the west. I know it threw the water out on the west side. The waters that irrigated the east side of the Wine Cup came down through that slough and short ditch. In those days the water in that short ditch got down as far as the point opposite the house on the east side, somewhere about a mile and a quarter. There might have been plow furrows taken out. The water followed the road and there was also swales in there. I never noticed any place where hay was cut on the Wine Cup prior to 1889. There was no cleared land. There was some natural meadow towards the house.

If it was cleared, the brush was all taken off so that you couldn't tell it from the natural meadow. Of course I was not the first one in the country and the water might have been turned out before I went there. I never saw any ditch that had been constructed before I went there.

In 1900 hay was cut on the south field at the Grande ranch. In 1894 there was some land cleared on the lower ground and my recollection is the upper ground had already been cleared and put into alfalfa. That had been done between 1889 and 1894. The land was cleared on the lower ground next to the creek. I think it was somewhere in the neighborhood of 50 or 60 acres. I don't remember of seeing any hay cut in the middle field on the Grande ranch. I think there was hay cut above the house, but I am not positive. It seemed to be used for pasture principally. There was a small stack in the upper field when I went there in the fall of 1883. It was cut off of what I call the natural meadow from Willow Creek on the west side. I think there were 30 or 40 tons there. I saw hay there in 1884, '85, '86, '89 and '94, I think I was there in '95, 1900 or 1901, and I believe in 1905. There is a slough to the west side of the stream in section 35, on the Grande ranch, extending from above the ranch clear down below the end of the field, but I never located it. I would not swear there were any ditches on the west side. I think there is, but I won't say positively. Water was distributed over the west side by a plow furrow run between the creek and the slough by Mr. Filkins,

down through the center of the piece. It made a deep wash there, in some places three or four feet deep, and the water is distributed from that wash to irrigate both sides towards the slough on the west and the creek on the east. On the west this slough is nothing but a swale and the water simply spreads out on the west side on what I have marked the bottom of the swale. On the west side of the middle field the land is irrigated partly from the same slough extended out, and also there was a dam put in the creek above the house that threw the water out on that land. I saw that dam in 1886. It was a stone dam. The creek at that point would be perhaps 15 feet wide and three or four feet deep. Referring to plaintiffs' exhibit No. 13, the area marked in red would be, I should judge, at the extreme south end of section 2 and the north part of section 11. You might say that the west side of the creek in section 35 is all under a ditch taken out from the head of this creek, just above this dam and extending straight across next to the fence, to a point 40 or 50 feet below the fence; that is my recollection. It extends some 10 or 12 chains out the east side across the slough. This map shows what was there in 1889. The ditch I have just mentioned was built in 1901.

INTERROGATIONS BY THE COURT:

I obtained the information from which I have drawn this map in October, 1889. I shaded those parts of the map in black to indicate the extreme outer edge of the irrigated lands. The shading on the inside is the lands under irrigation in 1889. I

called them irrigated because they showed signs of having been irrigated. The water had been over the ground and the grass was thicker and more of it on that land than there was on the land on the sides away from it. I had seen water on it; I had assisted in putting water on part of it in 1886 but not on every acre of it. I could pretty well bear in mind where the water had been during 1886. I was over that ground pretty thoroughly. I was working for the company then, during the whole spring, summer and fall of 1886, on different parts of the range, and I took particular note what had been done up to that time, and noted as well what I did in the way of putting in dams or taking out ditches, or laying out ditches to be taken out. I made these sketches in 1889. I did not sketch them from memory of what I had seen in 1886 but from the actual survey on the ground in 1889. In selecting the outer edges as shown upon this map shaded dark, I went by the edge of the bottom land, where it had been cut over for hay. The edges were shown very plainly by the markings of the better growth of grass that was on it. You might say that by that time most of it had been partially cleared off, or the brush partly killed by the irrigation. Of course, where the ditches were they showed the outer edge of the irrigated land, because it was all irrigated below the ditches.

Defendant thereupon introduced in evidence Defendants' Exhibit No. 1.

Cross Examination of Mr. McClellan (continuing):

In 1881 I was in the valley one night, selecting lands for Sparks & Tinnin to buy. I saw it next time in 1884 when I was there two nights and one day. At that time I selected 920 acres of land in that township and 480 acres in township 46 north. I was at the ranch itself two nights, of course, and part of one day, and the evening of the first day I reached there and the morning of the next day. The day I was there was spent mostly in selecting this 900 acres of land. My recollection is I located some land at both the Rancho Grande and Wine Cup fields, the first time in 1883 and this time in 1884. The next time was in 1885 I can't remember the exact date I was there in 1885, but I think it was sometime in July or August. I don't remember the period of time I was there; I think it was two or three days. I have testified largely from a typewritten memorandum which I have held in my hand. I wouldn't be able to say without reference to that what time I was there or how long. This is taken from an old satchel of note books that I have with me, and I have selected out the different times that I was there and what I did. In 1886 I think I was there a week or 10 days; I don't know positively, but according to my notes I laid out the ditch that extends along the east side of the house, on the first day of April. That took me a day or two. I did other work around there, so I suppose I was there a week or ten days at that time. During that year I was there several times. I was there in June I think some two or three weeks. Next time I was there was in October, 1889. I did not

make any surveys of the ranch to determine its irrigable areas until 1889. I have no distinct recollection as to how I made the surveys, except as to the general way that I do those things. This note book and the plat in it was made in 1889. I had a pencil sketch and I noted down some of the points I wished to bear in mind. I have not a particle of objection to your seeing it. The principal note I made at that time is the connection between the quarter-section corner on the north side of section 35, 47—

THE COURT: Mr. McClellan, just answer the question. Read your notes just as you have them.

Mr. McClellan (reading): Quarter corner between 26 and 35, northeast corner of fence, north 54 degrees west four and a half chains. Head of new ditch north sixty-three and a half west, 18 chains. That was there. (Indicating.) Corner to one and two north boundary of forty-six, sixty-eight, south 60 chains and west 20 chains, thence I run south 34 degrees east 39 chains, reaching the south boundary, reaching 40 chains south of that point, 40 chains 62 links south of that point and 27 chains and 40 links east. At this point, to the southeast corner of the fence. Lower end of ditch south 15 east twenty chains and a half from section corner. This is the corner to sections 1, 2, 11 and 12. The end of the ditch was south 15 degrees east twenty chains and a half. That ditch was constructed and surveyed in 1886. In connection with the Rancho Grande ranch I have in addition to that only a set of levels of the new ditch that I laid out at that time. I don't know

when it was constructed. It was there the next time I was there on the ranch. That is all I have in my note book about the surveys I made there. The sketch in the note book was made on the ground at that time. It isn't a loose-leaf.

Q. We would like to have this in the record so that the Court can see it, but I won't ask you to leave your book here if you will just make us a duplicate.

A. Can I make a sketch of it later on?

Q. Yes, on the same sort of paper, but let the Court see it now so that he may understand what we are talking about. Now, let us go to the Wine Cup and see what your book says about the surveys made at that time.

A. I have no note of anything but simply a sketch of surveys made at the Wine Cup at that time.

Q. Could you mark in red upon this map just what the book says there, what you have read from the book, so that it may be readily identified upon the map?

THE COURT: Do you want him to indicate the lines, or write on it?

MR. HAYS:

Q. Indicate the lines, where it is simply made up of a note of a course, mark it with a number, and on the margin with another number, so as to identify it.

A. You just want me to simply mark on this the lines that I run?

Q. Yes.

A. Oh, yes, I see. I think that covers it.

Q. Calling your attention, Mr. McClellan, to a

portion of the land marked in red in section 2, on exhibit No. 13 of the plaintiff, I would like to have you mark with a cross, with a red pencil, the general location of that on your exhibit No. 1.

A. With a cross, or just outline it?

Q. Well, you may mark it with an outline or a cross, whichever you can do best, most conveniently; it is immaterial; just mark it heavily enough so that we can see it.

(Witness did as requested.)

Q. Now, calling your attention to plaintiffs' exhibit No. 13 and a portion of land in section 13, marked in red, at the Wine Cup ranch, will you please designate on this map the general location of that area by a cross?

A. It covers considerable territory there.

Q. Well, mark it.

(Witness did as requested.)

The area marked in red on plaintiffs' Exhibit No. 13 is not entirely above the slough that takes out on the east side, and not so represented on my map. I haven't that marked on my map. The slough that I have marked upon my map is also delineated upon yours. To ascertain the area of this shaded portion in section 35, as well as other sections on the Rancho Grande, I took what we call cross-section paper, ruled ten squares to the inch, and a scale of ten chains to the inch on this paper and transferred from my book to the quarter section corner the exterior areas of the irrigated lands, and also all the topography I had on my book, and then to find the amount of land there

was inside of this, each small square represented one-tenth of an acre, and I counted the number of squares that there was in the different pieces that I wanted to find out, and the number of squares represented the number of tenths of an acre there was in that particular piece. There are machines for computing areas of that kind. If you have a good machine, it will do it just as accurately as my method. It might not do it more accurately. The little squares in my original book are five chains square, or 330 feet. A lead pencil mark covers up quite a little of the land. Where it is a hard pencil it possibly doesn't cover much of the land. A slight variation in drawing my line in a small book might make some little difference, but as a rule you will find that those variations will neutralize one and another in a sketch, and where you run off a little bit on one side at another point you will run the other way, and they will come very close. It is not a matter of personal equation. I would say that the shaded area is accurate within an acre. The area is 438.4 acres under the new ditch; of this 428.2 acres was under irrigation in 1889. As shown on defendant's exhibit No. 1 the exact area of the shaded portion is 428.2 acres. I don't think it is more than an acre out of the way. The only ditch I found on the Wine Cup in 1889 is the one that is shown on the north end of the ranch in section 13. There was plow furrows through the field, simply small leads to distribute the water. There was quite a number of them but I don't remember where they were. In 1889 that ditch had dropped

into the old road, and the road was being used as the ditch, and there were dams put in the road. And I can't remember whether there were plow furrows taken out from there or not, but I believe there was in different places to cover the land. I don't recollect about that at this time. I have no note of such a thing; it is just my general opinion in regard to it. I didn't see any ditch on the west side of the Wine Cup in 1889; there might have been. I know I laid out one in 1886, but I didn't locate it. On the east side of the Grande ranch in section 35 in the upper field there was 87.1 acres that was under irrigation, and I think every acre, except just a few little places along the creek were cut. There were willows part way across the field that taken off perhaps two or three acres of land. On the east side there was no pasture; that was all cut. On the opposite side of the creek in the same field there was 134.4 acres under cultivation, and I can't give the exact number of acres that were cut. I think there might have been 20 acres of pasture. The balance was hay land. This is simply from recollection and may not be anywhere near right. I made no difference in my plats between hay land and pasture land. I didn't make any survey of it except as I have explained. In 1889 in the middle field on the east side I think there was about 20 acres of hay lands and the balance of 141.2 acres was pasture land. On the west side I think there was about 40 acres cut and the balance of $25\frac{1}{2}$ acres was pasture. The forty acres that was cut on the west side was in both ends of the field; part of it was

almost directly opposite the house and part of it towards the upper end of the field. This water was spread out over the ground partly from a slough or draw that came down from the upper field on the west side and there was a dam on the upper end of the field that diverts water to the main east-side ditch, and I believe the water spread over it to the west side on account of the dam. My recollection is that the water from the dam in the southwest quarter of the northeast quarter of section 2 diverted water on both sides of the creek and that was carried along the west side to irrigate the lower end of the field. I have no recollection of any ditch on the west side. There were sloughs and dams in the sloughs. It was all pasture in the lower field on the east side. I have already noted that as a part of the east side down past the house as the total of both the middle and the lower fields, 141.2 acres. It was impossible to segregate those fields because the water comes down from all those ditches and sloughs onto it. The 141 acres extended over to the lower end of the middle field as well as the upper end of the house field. In 1889 there was sagebrush in the lower end of this field. In that year I don't remember of seeing any sagebrush in the upper field. In the middle field there was some sagebrush cleared off above the house up to the upper end of the field on the east side. In the lower field I don't think there was anything done except to turn the water out and let it run over the field. I never knew of or saw any irrigation in 1889 on the west side of the lower field. I never knew of

or saw any ditches there. It is the shaded portion on that map that amounts to 428 acres. It was irrigated. Cultivation on a stock ranch is considerably different from other ranches.

RE-DIRECT EXAMINATION:

I have made the tabulation that counsel asked me to make yesterday with reference to the irrigation up to 1889 on the Rancho Grande and Wine Cup fields. I have tabulated the computations and have given counsel a copy. Defendants' exhibit is the result of my computations.

Defendants thereupon introduced in evidence Defendants' Exhibit No. 2.

Referring to those tabulations the total area of land under cultivation on Rancho Grande in 1889 was 428.2 acres. On the Wine Cup field the total area under irrigation was 269.2 acres. The total on both Rancho Grande and Wine Cup under irrigation in that year was 697.4 acres. The photograph marked Plaintiffs' Exhibit No. 22 shows a ditch that was constructed prior to 1889, taken from the south side of section 12 and extending southeasterly. That is this ditch here. (Indicating.) The ditch is shown on the photograph about the same distance as it is shown on the map, somewhere in the neighborhood of 10 chains.

The Sparks-Harrell Company came into possession of the Rancho Grande and the Wine Cup, I think, in 1891. Sparks & Tinnin were in possession prior to that time. I understand they bought Rancho Grande and Wine Cup in 1881. The Vineyard Land

and Stock Company succeeded the Sparks-Harrell Company in possession.

HERMAN B. WAY, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I am a civil engineer, twenty-four years old, and have had experience in my profession a little less than six years. I have had experience in land surveying over a period of five years; the longest time on one survey was about nine months. Assisted by Mr. J. H. Patton, Mr. W. A. Crosby, Mr. R. B. Patterson, Mr. Frank J. Kramer, Mr. Herbert Barrows and two other men whose names I do not know, I made a survey of the property owned by the Vineyard Land and Stock Company on Goose Creek in the State of Nevada. This work extended from March 22 to April 25 of this year. Defendants' Exhibits 3 and 4 are the plats of this property, made under my supervision. Where lines are shown we obtained them by means of a transit. All distances on the base line were procured with a chain. The red line upon Exhibit No. 3 indicates the base line. That is also true of Exhibit 4. Some of the distances shown on the map were obtained by chaining them and some by stadia readings. I know something of the degree of accuracy of stadia readings and I would say that you would never be more than five-tenths of a foot out on a reading 2,000 feet away. Notes were made on the ground at the time these surveys were made and I have these notes. These maps were made up under my supervision from these notes, and I have checked

the maps with the notes. On defendants' exhibits 3 and 4 Goose Creek is shown with a double line in blue. The name is written along the line. In making these surveys we made locations of ditches, edges of the meadow, roads in some places, bench lines, boundaries of stubble fields, houses, corrals and such improvements as were on the ranch. So far as I know the ditches do not bear any name in that section of the country. I have numbered the ditches for the purpose of computing the acreage under irrigation. Upon Exhibits 3 and 4 the ditch lines are indicated with a plain blue line and bear a number. No other lines, except ditches, on Exhibits 3 and 4 are numbered. The numbers are in lead pencil. The fence lines are shown by the conventional sign of a line and a cross and another line and a cross. The greater part of the defendants' property on Goose Creek is fenced. The property lines of the defendants' lands are shown by a heavy marking around subdivision lines and sections. I made computations of the areas located under the various ditches shown upon Exhibits 3 and 4. In all cases where it was irrigated I made measurements of the land by means of stadia readings from a base line. To ascertain and form a judgment as to how much land was benefitted by irrigation, we took the actual edge of the meadow lands and stubble lands, as we subdivided it in the book. The area under irrigation under ditch No. 1 is 298.8 acres; 252.4 acres of meadow land and 46.4 acres of stubble land. On the Rancho Grande there is under ditch No. 14, 201.8

acres of meadow land; ditch No. 15, 94 acres of meadow land; ditches No. 1, No. 14 and No. 15 include all the acreage on the Rancho Grande. Under ditch No. 2 on the Wine Cup field there are 84.8 acres of stubble; ditch No. 3, 126 acres of meadow; ditch No. 10, 8.8 acres of plowed land; total under ditch, 451.2 acres. The balance under these ditches is grass and rabbit brush. It is fenced pasture lands. Under ditch No. 12 there are 64.4 acres of meadow, 35.4 acres of stubble field, making a total acreage under ditch No. 12 and ditch No. 10 combined of 558.8 acres. Under ditch No. 13 on the Wine Cup field there are 33.2 acres of stubble field. Ditch No. 13A is a part of ditch No. 13 and under it there are 23.2 acres of plowed land. That is in addition to what I gave under ditch No. 13, or a total under ditches No. 13 and 13A of 61.2 acres. I believe that concludes the Wine Cup field. Following down the stream the total acreage under each of the ditches is: Ditch No. 4, 134 acres. This is south and a little more than a mile east of the Wine Cup field. It is taken out of the south side of Goose Creek. Of the acreage I gave under ditch No. 10, 451.2 acres is below the Wine Cup field and 8.8 acres is in that field. Under ditch No. 4 the character of the cultivation is grass and brush. Ditch No. 5 heads in section 25, ranges 69 and 70 east, township 47 north. There are 88 acres of grass and brush under that ditch. Ditch No. 6, 218.8 acres of plowed field; ditch No. 7, 74 acres of meadow and brush land. The head of ditch No. 6 is in section 19, township 47 north,

range 70 east, about 550 feet east of the range line and 400 feet south of the center line of section 19. Ditch No. 7 heads in section 19, about 900 feet east of the range line, and 450 feet north of the center line of section 19, 47,70. Ditch No. 8 heads in Jay Creek, in section 24, about 1700 feet north of the section line between 24 and 25, and 2400 feet west of the range line of range 69 and 70 east, township 47 north. The area of meadow land and brush land under ditch No. 8 is 144 acres. Spring Creek is shown on Exhibit No. 4, with one line drawn in a similar manner to Goose Creek, with the exception that it is a single line. It is in the southwest corner, near sections 23, 22 and 15. The ditches there are numbered. Ditch No. 1 heads in section 26, in the northwest quarter of the northwest quarter, about 200 feet south of the section line between 23 and 26, and 900 feet east of the section line between 26 and 27, 46 north, 69 east. The acreage of meadow land under this ditch is 25.8 acres. Ditch No. 2 on Spring Creek heads on the section line between 22 and 23, about 550 feet north of the quarter corner of 22 and 23, 46 north, 69 east. I haven't the acreage; it was pasture land under this ditch. Ditch No. 5 on Spring Creek heads in the northeast quarter of the northeast quarter of section 23. The acreage under this ditch is 55.2 acres of meadow land. Ditch No. 3 heads in the northeast quarter of the northeast quarter of section 22, about 307 feet west of the section line between 22 and 23, and 450 feet south of the section line between 15 and 22, 46 north,

69 east. The acreage under this ditch is 33.8 acres of pasture land, grass and brush. I haven't the acreage under ditch No. 4. In addition to the ditches I have given there is Ditch No. 1 on Little Goose Creek. It heads in the southeast quarter of the northeast quarter of section 26, 46 north, 68 east. There are 67.2 acres of stubble field, and a total acreage under ditch of 89.6 acres; the balance is pasture land, grass and brush. There are 45.2 acres of flooded area below the end of the ditch. This is pasture land. Wherever ditches are shown on these exhibits the length of the ditch and the course are accurately shown. By means of a scale the length of each ditch can be ascertained to a very close degree of accuracy. The scale of these exhibits is 1000 feet to the inch.

CROSS EXAMINATION:

When I referred to brush land, I meant sage brush and sometimes rabbit brush and greasewood. I did not include willows. When I referred to pasture land I meant land that is fenced in and used for pasture. By meadow land I meant land, the greater part of which had actually been cut for hay. It was meadow land that could be cut. I was employed by the company last year, but I did not work for them before that. I was on this property several times during the summer last year. I made the original survey of ditch No. 5 on Goose Creek before it was constructed. I did that this spring. I surveyed ditch No. 7 on Goose Creek this spring; also ditch No. 9. In measuring ditch No. 15 on the Grande ranch on the east side, from stations on a general

base line in accurate courses, I turned true angles and took stadia readings of all the bends in the ditch. I didn't chain the ditch line itself, but points on the base line and platted it on accurately. Ditch No. 13A was done in the same way.

Defendants thereupon introduced in evidence Defendants' Exhibits No. 3 and No. 4.

CHRIS MORTENSEN, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I am employed by the Vineyard Land and Stock Company and have been located on the Grande Ranch and the H. D. Ranch. I became foreman of the Grande Ranch the 1st of July, 1913. I irrigated there during the years 1913 and 1914. In 1913 I irrigated the Wine Cup. On the Grande Ranch the ditches were taken out from the upper end of the field and irrigation was by the flooding system. That was the system carried on all over the Grande Ranch. I did not build any ditches myself during that year. I would think there was a little better than 200 acres cut in the upper field on the Grande Ranch in 1913, and I would think a little more than 100 acres cut below the house. In 1913 on the Wine Cup I placed some straw dams in the old cuts where they had been before, and just flooded the water out over the ground through the old ditches. In 1914 I had to plow them out a little to get the water through; cleaned them out. I used the same ditches and covered the same territory as in the previous year. In the Wine Cup field I would think there was better than

200 acres irrigated in 1913. No part of it was mowed. A little more than that was irrigated in 1914. That year we cut some grass. I had some Italians there that was clearing the brush from the edge of the creek for the purpose of enlarging the area of the meadow land. It had been used for pasture apparently and young willows had started growing up all through the openings, and we had these willows cut out. I know the location of what Mr. Griffith called sloughs. In 1913 there were places all the way along where you could see where they had been used to check the water, that is, dams put across them and they were used as ditches. It was a natural swale or low place in the ground and saved making a ditch. From these checks that were put across there had been small ditches plowed around the high places and taken out and spread over the meadow proper. I continued to use these methods either at the same places or at the places I made in the same slough during the two years I was there. Part of what has been referred to as the island was in cultivation in 1913 and all of it in 1914. There was an old ditch that heads in the island and goes down to the Wine Cup field. That is the only ditch, but it is washed down deep. We couldn't use it to irrigate on the island. The island is irrigated by what you would call sub-irrigation from the stream.

CROSS EXAMINATION:

There were no new ditches built on the Grande Ranch in 1913 or 1914, nor on the Wine Cup while I was there. On the lower end of the Grande Ranch

on the west side when I first went there in July, 1913, there was fall wheat, sowed in the spring. Apparently that was not all new ground; I don't know how much that had been irrigated. I didn't say anything about how old the cultivation was that had been in crop before that time. It was apparently not new, because it was mellow, it plowed up nice, but I don't know anything about it. It was nearly always soddy. It was irrigated by corrugations from the ditch that comes out just below the upper field above the house and runs around on the west side. I think the ditch is right close to the partition fence. It was an old ditch so far as I know; I don't know when it was built. It didn't appear to be new at all. I don't know how old the cultivation in that field was. I would say that it had been planted to something before that spring, but I don't know.

MARK CONGER, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I run the outfit on the Wine Cup from the fall of 1907 until the spring of 1910. My headquarters was at the Gamble ranch on Thousand Springs. I went to Rancho Grande the last of November, 1907. I saw fields, one above the house and one below the house, on which hay had been cut that fall. There was stacks on both fields. In gathering cattle I used the Wine Cup field and the field about the house, too. The one above the house was used to wean calves in that fall. I used it in the winter time for pasturage all winter. The Wine Cup field was used gen-

erally as a saddle horse pasture. Generally we would hold the cows in the Wine Cup field when the calves were taken to be weaned. That was in the fall of the year. There was one dam above the Wine Cup field about a quarter of a mile. In the spring of the year as a rule the water was all over the field. It was wild meadow. There was only one ditch that I remember very well on the meadow or field above the Rancho Grande house. It is the one that comes around on the east side above the house. I have seen water over the field above the house and the one below it, during the spring of the years 1908 and 1909. I wasn't there at all in 1910.

CROSS EXAMINATION:

I was there in May and June and in August and September, and then later in October and November, 1908. Hay was cut that year on both sides of the river; the larger part on the east side. I couldn't give any estimate of the acreage cut over, nor the tonnage, because I don't know. The water I have spoken about that I saw there was during the irrigation season. I was there as late as the latter part of June. There was lots of water there in June all the time.

RE-DIRECT EXAMINATION:

I was never there during the hay season. I don't know how many ditches I noticed on the Rancho Grande. I never did pay any attention to them. I knew the water that was in those ditches came from up the creek some place, but I didn't know just where. I saw all of the fields covered with water below the ditches.

HUGH McGUIRE, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I reside at Wells, Nevada. I worked on Goose Creek in the spring of 1906 for the Sparks-Harrell Company. I worked for the same company on Salmon River and part of the time on Thousand Springs some years before that. I had charge of what is called the ditching crew and fencing and such as that. I was on Goose Creek from the 1st of April to the latter part of June or the 1st of July. I saw one ditch on the east side of the creek above and at the house. I did not make any estimate of the amount of land covered by that ditch. When I was there in the latter part of June, they were not irrigating, they were turning the water off then to get ready to hay. The ditch I saw at the place where I noticed it most would be something like four or five feet wide on the bottom and two feet deep.

D. C. WORKMAN, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I reside at Churchill, Cassia County, Idaho. I went into the Goose Creek country in Elko County, Nevada, in 1899 and was there and familiar with the Rancho Grande off and on until 1910. I went onto the Rancho Grande in the fall of 1905. I was foreman of the ranch. I was on the Rancho Grande in August, 1899, and saw hay there at that time. They were haying in the lower field and also in the upper field at Rancho Grande. I saw ditches and

water in them. In 1905 when I was there I followed the ditches up; they took water from Goose Creek. As far as I note they are the same ditches that I saw in 1899. I was there in 1900, 1901 and 1903. In those years I saw hay every year on the Rancho Grande in the two fields. In 1905 when I took charge of it I cleaned out ditches, preparing to water the ground the next spring, and also fixed fences, corrals and the like of that. In the fall of 1905 I irrigated what is known as the lower field; that is, the biggest portion of it. There was a dam in the creek above the house just below the partition fence. The field was just flooded in order to make late pasture for stock. The boys in the fall would sometimes put saddle horses, and I also used it for my work horses and milch cows and the like of that. I did not do any irrigating in the spring of 1906 before I left. While I was foreman on Rancho Grande I was at the Wine Cup field and saw one dam above the Wine Cup a short distance which carried the water into the field. There were two ditches leading from that dam; one on the east side, and one on the west side. They appeared to be old ditches according to my recollection. The first time I saw them was in the fall of 1905. The amount of meadow land that was cut in 1899 on the Rancho Grande appeared to me to be about the same as in 1905. I cleaned out two of the ditches in the upper field in that year. One was on the east side and one on the west side. I cleaned out one ditch in the field just below the house. That is the one that comes from the middle field

leading to the lower field. I saw evidences of a dam in the field below the house.

CHRIS MORTENSEN, heretofore sworn as a witness on behalf of defendants, being recalled, testified as follows:

CROSS EXAMINATION:

Referring to defendants Exhibit No. 1, the place we call the island up there was where one branch of the creek makes a turn after it comes in from the fence; there are three branches of the creek just after it gets into the Wine Cup field. It looks like a creek, or old-time ditches, or sloughs. The land in between these three branches is what we call the island. Counting the river on the one side and the slough on the far side, there would be two islands and another slough down the middle. That is the area I spoke of when I mentioned the island. It begins at the upper fence of the Wine Cup field on the west side of the creek as you come into the Wine Cup fence there.

WALTER GAMBLE, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I reside at Spring Creek, Nevada; have been there a year. Spring Creek is a tributary of Goose Creek. I have been acquainted with the Goose Creek since 1875. In July of that year I went there to the Wine Cup ranch. J. C. Armstrong was in the cattle business there at that time. The Wine Cup field is about a mile and a quarter or a mile and a half southeast of the Grande Ranch and lower down Goose Creek.

At the time I went there in 1875 there were dams in Goose Creek. I went fishing with J. C. Armstrong and he repaired the dam and throwed the water out. He just shovelled in there and built up the dam and dug around the end of it so that the water would go behind, and made a big slough. The water went into the Wine Cup field. There was just pasture and grass land there. There was nothing but the natural meadows there at that time. There was some sage brush, but no other brush that I can remember of. The sage brush lands were irrigated. Water was taken out of both sides of the stream. I am quite familiar with the Wine Cup field. I last saw it in January of this year. There is not any more land that I know of being irrigated today in the Wine Cup field that there was in 1875. I was there in 1876 and the water was taken out onto the same meadow land as in 1875. The same is true of 1877, 78 and 79. There was more ditches put in in 1889 and 81. There were no fences at the Wine Cup field in those years. The first fencing was done in 1886. In this slough that had originally been made by the Armstrong dam Mr. McClellan had put a dam in and a ditch made and the water was taken out right through the upper end of the gate on the west side and two ditches were made; one went along the edge of the fence and another right along the bank of the creek, and the water was thrown out on both sides there, and then dams was put in on the west side and two ditches put out there. One went right around the hill like that (illustrating), and carried it out, because

the fence runs over a little hill there. I worked for Armstrong three years. The water was taken out of Goose Creek in the Wine Cup field and put over sage brush land and the natural meadow land to make grass for pasture; It was used for cattle and horses. Between 1875 and 1881 it was used for pasture for holding beef cattle from the latter part of July until along in November. The old log house at Rancho Grande was built in 1882. On the Wine Cup there was a cedar cabin and dug-out. That is where Mr. Armstrong lived. He stayed there until the fall of 1881 and was succeeded in possession by Sparks & Tinnin. I worked for them at this place. The water was used on these lands after Sparks & Tinnin acquired them from Armstrong. The old house at Rancho Grande was finished in 1883. I moved up there in the spring of that year. In that year there was a dam put in just below the inside of the fence and ditches taken out on both sides of the upper field, above the house. The field was fenced in 1883. There was a rock dam there. The ditch that took the water from Goose Creek onto the east side of the field was about three quarters of a mile long. It was about four feet wide and two foot and a half deep. Water from that ditch irrigated all the east side of the meadow. The ditch was taken out on the west side the same year. It was a half a mile or more in length. I never measured it. It was about the same size as the ditch on the east side. That ditch irrigated the lands on the west side of Goose Creek. There was a hay crop growing there. It was

good timothy and wild hay. It was all sowed in timothy in 1883, on both sides of the stream in the upper field. In 1883 there was a ditch put around above the first ditch on the east side. It was for the purpose of making more land and increasing the water. The next ditch was put in the upper field in 1889. One dam was in the canyon at the head of the field and the other was put in below the cross fence, and a flume made of poles to carry the water out. This dam is about 200 yards above the dam that I put in in 1883. It is on the outside of the fence. There were two ditches leading from this dam. The other ditch was on the west side. The ditch on the east side was about ten feet wide at the head and further down about four feet in the bottom. The ditch on the west side was the same size. I was there when the dam was put in and the ditches taken out. I took charge of the outfit in 1887 and was in charge until sometime in 1900. My headquarters was at the Gamble ranch and the Rancho Grande. I spent the summer over the range. I kept my supplies at Rancho Grande. Willow Creek is west of Goose Creek and flows into it in the upper field. There were dams put in Willow Creek in 1889. Water was taken out and put into this slough and taken down and a dam put in and a ditch taken out that ran down into the two lower fields. I refer to the field at the house. The upper field was the one above the house. There is a field between these two fields where the house is. It is a grass pasture and was irrigated as soon as I could put the water on in the spring.

It was first put on in 1883. Water was used from Willow Creek on part of the lands on the west side of Goose Creek in the upper field at about the center; also on the pasture lower down. Horses and milch cows were kept in this field. The pasture at the house was irrigated the same as the upper field. I did irrigating in all of the fields. In the spring of 1905 Mr. Workman had been there that winter and he quit, and when the water came down I had to go up and tear the boards off the dam to let the water out and from then on I irrigated all the fields. I would go up and put the water into the main ditch and turn it out wherever I wanted it and scattered it all over the land. I irrigated both the east and the west side. I began along in April and stayed there for twenty days and kept the water over the fields during that time. It was necessary to keep the water over the fields in order to get a crop. Prior to that time water was put out each spring just as soon as the weather would permit, in the same way as I have described. It was kept there until time to cut the hay. I used all the water in the ditches for that purpose. It was necessary to use the water that came through the ditches in order to grow crops of hay. The pole flume I have mentioned was put in just below the cross fence, right close to the bank of the hill where the road is graded around to go into the upper field. It is at the lower end of the upper field. That ditch led down into the two fields past the house. There is one that passes just above the house. The waters were used to irrigate the lower field. Some

of the waters of that ditch were used to irrigate the pasture on the east side. Irrigation on the lower field began along in May or June of 1889. That ditch that I referred to as passing close to the house and the barn was put in in July or August, of 1889. The lower field was irrigated by a ditch that hadn't been put past the house. They turned the water off right at the corner of the house and lowered it down into sloughs and built dams across there. They had Mr. Will Gray and a man by the name of Joe Scott build those dams and levees. There was either five or seven levees built in the slough and the water was spread out. The slough was on the east side. There was wild meadow grass there. They planted timothy. There was 90 acres of alfalfa on the lower field. It was sown in 1891, on the east side. There was about 12 acres of alfalfa grown on the east side of the upper field; it was put in in 1883. The ditch that is on the west side of the upper field takes the water down through the other field. That is the ditch that the Willow Creek ditch leads into. I should judge that ditch runs about half a mile in the lower field. It reaches the lower end of the field. The land between that ditch and Goose Creek was irrigated. Timothy was planted in that field on the west side, along in 1889. There was some sage brush in those day on lands under the ditch, and it was irrigated. Timothy was sown in that place. The land was irrigated from that time on. There is about 180 acres in the field and it was very nearly all irrigated, except a small corner in one end of

the fence where we couldn't get the ditch on. In the upper field I should judge there was 225 or 230 acres that was irrigated in 1900 just prior to my leaving there. Over half of it was irrigated in 1889. It was our system to irrigate sage brush land under the ditches in those fields to make grass. There are two ditches in the lower field; they may have put more there since. I live now on Spring Creek. I did irrigating there in 1904. I irrigated 10 acres of alfalfa and about 35 acres of pasture land. The alfalfa was planted in 1904 and has been irrigated every year since then. The thirty-five odd acres of pasture has been irrigated part of the time, along in the spring. Irrigating was done on the Rancho Grande fields in the fall of the year to make the grass grow for pasture. Mr. Armstrong had some five to eight thousand head of cattle. Irrigation was carried on at Rancho Grande until it froze up. It was irrigated every fall just as soon as the hay was taken off during the time I was there. The ditch that passes by the barn and house is, I think, about four foot wide in the bottom and two to three feet deep. The ditch on the west side of the lower field is about three foot wide and in places it was five foot deep; it has an average of about two foot and a half. About 120 acres of pasture land was irrigated in the Wine Cup field. It was irrigated as early as we could put the water on in the spring continuously from 1886. There was about 100 acres irrigated when I went there in 1875. It was increased from time to time. After 1886 the Wine Cup field was irri-

gated for pasture land the same as in 1875. It was increased several acres after 1886. I did ditching on Spring Creek in 1904 to irrigate the alfalfa and pasture land; put in a ditch about two feet wide and two feet deep. The irrigation of the pasture land was to raise grass. I flooded the land and kept it there during the irrigation season. The irrigation season for summer crops on Rancho Grande and Spring Creek is from the 1st of March until into August; it depends on the season largely. If it is a warm early spring we usually put the water out in March, if possible. If it is a late spring the water is held off a little later. The water from the springs on Spring Creek is used to irrigate the alfalfa and pasture land. There is a stream a little to the northeast of Spring Creek and there is about 35 acres of land irrigated from the springs of that stream. We never had any particular name for it; just called it Spring Creek or Mud Springs. There were two streams there right close together called Spring Creek. On one I irrigated 10 acres of alfalfa and some pasture land, and on the other I irrigated the sage brush pasture. That irrigation has been carried on since 1904. All of the lands are in the same field.

In 1883 some of the land at Rancho Grande was not cut over. Sage brush land was irrigated in the upper field for pasture. It was afterwards cleared up and sowed in timothy. There was sage brush land in the upper field in 1889; it was in the upper end of the east side. It was cleared in 1886. When I was last on the lower field there was some sage

brush land being irrigated for pasture. It was in the lower end of the field. It had been irrigated ever since 1889.

On that second Spring Creek there was about 35 acres outside of the meadow and there is a meadow there of about 50 acres that is irrigated. That makes it about 85 acres. That is not the Spring Creek on which the alfalfa was raised. All of that 85 acres was irrigated in 1904 by me. They have continued to irrigate it since that time. I irrigated it in 1904 and 1905 and it has been irrigated every year since. There might have been a year that I was away on Rock Creek that I couldn't say. I was away in 1902, 1903 and 1910.

There was new land irrigated after 1889 in the upper field. It was sage brush land cleared off. Rye grass grew there. Water was put over it before 1889, but it was cleared up so that we could cut it; cleared the sage brush and the rye grass stumps, and after that it was used for meadow land. Prior to that it was irrigated from seepage. Grass grew on it. There would be about 50 or 60 acres of that. Land was added to this irrigated land in the field where the house is. There was about 100 acres there. It was used for pasture and was irrigated in 1883 and ever since.

CROSS EXAMINATION:

I was at the Rancho Grande continuously from 1882. I would go there sometimes in the spring and maybe stay there a week or two and go away again. In '82 I was there all during the year; I don't think

I could have missed a month. I was there in about the same way in '83, '84, '85, '86 and '88. In '88 I was foreman for the Sparks & Tinnin Company with headquarters at Tacoma, Nevada. I was at Rancho Grande mostly every month. I was there in the same way in '89. I was there in '90, '91 and '92. I quit going there in 1901. In 1888 there was 75 or 80 acres cut over at Rancho Grande on the east side of the upper field. There was about the same area on the west side. That year we got from 75 to 100 tons of hay. In that year there was no ground cut over in the middle field; it was pasture. There was none cut over in the lower field. None of that field was cleared of sage brush that year, and none of the middle field was cleared of sage brush that year. The lower part of the upper field was in sage brush in 1888, on both sides. The upper east corner was in sage brush. There was no hay cut on the Wine Cup in 1888. The first hay cut there was in 1914, as near as I know. It had always been in pasture up to that time. The pasture did not sub-irrigate from the slough that run through it; it irrigated through ditches put in there. There were two ditches on both sides of the river. The ditch on the west side of the upper part of the Wine Cup was put in in 1886; it was half a mile long. The sage brush wasn't cleared off. That ditch is there today and has been right along all the time. It is plainly visible. On the east side I said that a dam was put in the river; a little cut was made out from the dam and that created a slough. I suppose it is

the one shown on Defendants' Exhibit 1. That was taken out in 1886. Three other ditches were taken out on the east side. One came from the dam outside of the fence right through the bars and ran along side the fence, and the other one forked and came along the bank of the creek. That ditch ran the full extent of the field, which was a half a mile long. It was there in 1888. The lower end of the Grande Ranch on the west side, opposite the lower field, was irrigated in 1883. At the present time my occupation is farming on Spring Creek. I am not in the employ of the defendant company. I worked for the Vineyard Company for two years. I quit in 1910 or 1911.

RE-DIRECT EXAMINATION:

I quit the company in 1910 because Mr. Beason fired me.

RE-CROSS EXAMINATION:

I talked over the facts of this case with Mr. Griffith and Mr. Howells in February of this year.

W. G. GREATHOUSE, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I reside at Elko, Elko County, Nevada; am County Recorder and Ex-Officio Auditor of that county; have held that office for more than six years. I can't say I am familiar with the ranch at Rancho Grande or Goose Creek, but I have seen it. I saw it the first time in 1884. It must have been the latter part of May or the first of June. I was working for C. H. Hewitt, who was the foreman of the Sparks

& Tinnin cow outfit, known as the Rock Creek outfit. As I remember it there was no fence below the house at Rancho Grande in that year; it was above the house. I saw water over the bottom, parts of it, above the house. The grass that grew there was just native bottom grass. I rode down through it. I am not in position to say that there were ditches. At that time there seemed to be a very large body of water coming down the creek and it ran out in sloughs in different places; it might have been ditches. I couldn't say whether there was any hay put up on Rancho Grande at that time. I think it was in 1885 that I saw hay on that field. It was growing when I saw it. I was at Rancho Grande in the latter part of July, 1890. I was sent from the H. D. ranch to start some emigrants to cutting hay. The hay was to be cut in the field above the house, as I remember it. Hay was growing there. That was on the east side of the creek. I don't remember if I saw any on the west side. Native grasses were growing on the east side in the upper field at that time. I think there was some timothy and red top; there was a very good crop.

CROSS EXAMINATION:

As well as I remember the banks of the stream in places through the upper field were not very high. It seemed to be a comparatively small stream running through a mountain valley. In places it was rather deep and in other places it wasn't so deep.

HENRY HARRIS, duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I reside at Brown's ranch on Salmon River, Post-office at Rogerson. I came to the West in 1884 and went first to Tacoma. I was employed by Sparks & Tinnin and worked on the ranch at Salmon River from 1884 to 1913. During that time I had occasion to visit Goose Creek at Rancho Grande and Wine Cup. I was there twice in the spring of 1884, in June and July. I went over to help get a bunch of cattle that was delivered there. The next time I was there I went over in July to help put up some hay. This hay was in the upper field above the ranch. I don't recollect how much hay was put up. There was four of us and I think we stayed about 12 or 13 days and used pitch forks; didn't have any derrick at that time. I couldn't give any estimate of how many acres was mowed over during that year. There was quite a lot of ground irrigated that year that we didn't cut over. That was used for pasture. I think there was just the one field at that time. It is the one that is now called the upper field. I don't recollect whether there was any of the middle or lower field irrigated at that time. It was meadow ground along there. I don't recollect exactly how the land was irrigated, but there was water on the meadows and it seemed to be flooded just like we did over at the other places; there were ditches there. I don't know exactly how they were located, or how long they were. In 1884 there wasn't anything being done in the Wine Cup. I think there was a corral and cabin, but nothing fenced up.

It was thereupon stipulated that the plaintiffs would proceed to introduce evidence in rebuttal, and that the defendants would be permitted later on to introduce evidence as to titles of its lands, and also the testimony of Mr. Jensen and Mr. Franklin concerning the capacity of the old ditches on the property of the defendant on Goose Creek, in Nevada.

W. R. GRAY, duly sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I reside part of the time at Oakley and part of the time at my ranch in Box Elder County, Utah. It is in the Goose Creek Valley between Nevada and Idaho. I have been familiar with the country covered by the Grande, Wine Cup and other ranches shown on the various exhibits here since 1877. I have been there practically every year, except the summer of 1889. I am engaged in ranching and stock raising. I can't say that I am acquainted with ditch No. 6, marked on Defendants' Exhibit No. 4. The ditch on the east side of Goose Creek, below the mouth of Hardester Creek, was built in the fall I think of 1912 or 1913. The ditch on the opposite side of the river from Hardester Creek, or the Jay Creek ditch, was built in the fall I think of 1912. The ditch on the south side taken out just above the mouth of Bluff Creek was built the same fall. The ditch on the north side was a new ditch; I couldn't say as to exactly when it was built. I think it was built within the last three or four years. There is some alfalfa at the Spring Creek ranch that has been there eight or ten

years I expect. I haven't any dates to refer to. It is probably 10 or 12 years. There is some natural meadow down along Spring Creek on the east side and then over what they call the Spring Creek slough there was a kind of an over-flow meadow there. That land on the east and north is naturally over-flowed; that is, the bottom is. Of course, what they have cleared there I don't know. I think there is a ditch taken out on both sides of Spring Creek running north towards Goose Creek. These ditches were built perhaps three or four years ago. I couldn't be positive. I have seen the ditches on the north and south side of Goose Creek between the mouth of Spring Creek and the Wine Cup ranch. There is only one ditch, if I think right, on the south side of Goose Creek until you get to the forks of Big and Little Goose Creek. That was built in 1912. To a certain extent I am familiar with the Wine Cup ranch. I believe there is some grain land a short distance above the point where Little Goose Creek empties into Goose Creek. It is under a new ditch built, I think, the last two or three years. I don't think it is older than four or five years. I was at the Wine Cup ranch first in 1887. There was a fence there. I just went up through there one evening. This was in the summer after the irrigation season. I don't think I was there again for one year. I was there in 1888 and I believe I have been past and through there substantially every year since that time. In the fall of 1889 a man by the name of Mr. Scott and myself fixed up an old dam in a slough

there and plowed out a ditch for a couple of hundred yards down towards the Wine Cup field, but I never turned no water in there. I never done no irrigating on any of those lands. I could not say whether there wan any irrigation there before that time. There was ground cleared on the Wine Cup; I hardly consider myself competent to say how much. I am not a surveyor, but there was quite a lot of meadow land there, natural meadow, in the Wine Cup field. The natural meadow did not need any clearing of sage brush. The first I know of any hay being cut on the Wine Cup ranch was in 1914. No crops of grain or other crops had been raised on the old original Wine Cup. The meadow there was perhaps between three-quarters and a mile long and from a quarter to half a mile wide, but I am no judge of land as far as measuring it is concerned.

W. H. MARTIN, duly sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I have been acquainted with the Wine Cup ranch since 1896, and until 1912. During the period from 1896 until 1912 there was, as I remember, one ditch taken out of a slough in the east side of the field and run down along the east side covering a portion of the meadow down towards the lower end. There was little spots of meadow all along up and down the field, but as I remember it more irrigating was done in the lower part of the meadow down towards the lower end. I would estimate that there was possibly 50 acres of grain that was irrigated on the Wine

Cup from 1896 to 1912. I was on there several different times each year during that period. There is a good deal of cultivation on the Wine Cup where grain has been raised, as I seen it the last trip I made there, which was within the last couple of months. The grain has been put there since 1912. Prior to that time it was, as I remember it, sage brush and greasewood land, or rabbit brush land. The first time I saw the Spring Creek ranch, there was no ranch there. As I remember it possibly in 1904 or 1905 it was fenced and there was some little alfalfa put in there, and there is some natural meadow there, swamp land. That doesn't require irrigation. The area of that swamp or natural meadow, as I estimate it, would be possibly 20 acres. The new ditches were taken out there between the time that I was there in 1912 and the last time I was there. Those ditches out of Spring Creek are new ditches, built since 1912. I have seen the new development up above the Wine Cup ranch. It consists of newly plowed ground and stubble land. I have never had experience in estimating land and never measured any, but I would say there was somewhere in the neighborhood of 160 acres there. It was put under cultivation since 1912. It is above the old Wine Cup and kind of east. Some of it runs down the west side. Prior to 1912 below the Rancho Grande there was nothing irrigated except approximately 50 acres at the Wine Cup, there being now about 160 acres of new development made since 1912. I have been acquainted with the Rancho Grande since

the same year. There was a good deal of meadow land, hay land, there. I would estimate there was in the neighborhood of 100, possibly 150, acres in the upper field. There was some meadow in the middle field around the house, but I never saw any hay cut there. That was just used as pasture. There was some hay down in the lower field. I would estimate that there was somewhere near 80 or 100 acres cut there. When I left there in 1912 the acreage in the upper meadow was about the same thing, I would judge. There was just a little improvement made in the lower field. I believe there was a little more meadow the last time I was there in 1912 than what was there before. There was a little improvement in land being cleared. The place where the house is I never saw any hay cut between 1896 and 1912; that has always been pasture.

CROSS EXAMINATION:

I am interested in the waters of Goose Creek; I own some shares in the Reservoir Company, one of the plaintiffs. The occasion for my being up about Rancho Grande and the Wine Cup during those various years was that I have been in the stock business a number of years and before that I rode for the Jews Harp Company. I was never employed there by the owners of the place. I was never employed to do any irrigating or to put up hay there. I was employed by Mr. Worthington to work at his place which is possibly 15 or 16 or 18 miles further down Goose Creek. I never did any ranching much up or down the creek either one. I was there principally in rid-

ing, and camped there with the Wine Cup outfit. Sometimes I would be there a month at a time, or three weeks. I did not particularly pay any attention to irrigation on the Wine Cup in those days; nothing about more than usual to attract my attention. I didn't look the field over with the purpose of ascertaining the areas that seemed to be benefitted by irrigation. I didn't look it over for the purpose of determining whether there were any ditches there and if so where they were located. I did not do that at any time in any of those years. Fifty acres on the Wine Cup is all that I remember of seeing water on. I saw water scattered over some of it; that was on the east side of the creek. I don't remember if I ever saw any water on the west side. There were some spots of meadow on the west side. I don't know where the water came from that irrigated the west side, unless it came from overflow of the creek. I never saw any ditch built along the west side. I could only say I never saw any. I wasn't looking for any ditch. Altogether I would say there was possibly 75 or 80 acres of grass or meadow on the Wine Cup; that would be to the best of my judgment. I would hate to say how accurate I could estimate an area of two or three hundred acres. I think I could get within fifty per cent., but I wouldn't say that I could get within twenty-five per cent. of the area. I never have at any time looked over that field for the purpose of forming a judgment as to how much land there was in the meadow. What I have testified to is simply my casual observation

from having passed by or stopped there at the ranch, without having any purpose in ascertaining the amount of land. I never observed the ditches used in connection with the irrigation system on the Grande ranch in particular. I have seen the ditches. I know where most of them are. There are two ditches, as I recollect, comes out of the head of the field. They were above the house. I would say they were possibly three or four feet across. There are other ditches down towards the other end that comes along the other side. There are only two ditches that I remember on the upper field that takes out of the old creek and there is other ditches cut through the meadow used for irrigation purposes to get it onto the high land. All I recollect there are two ditches that communicate with the creek in the upper field. In the middle field there are ditches; there is one on the east side and as I remember it a kind of a slough on the west side that there was a dam in. I don't think it was a made ditch. I cannot recall any other ditches on the middle field. In the lower field there was just that ditch that extends down around the house and runs into the lower field on the east side. There was just one on the east side. I did see a ditch on the west side just recently. It looked like a new ditch to me. I never saw a ditch there on the west side from '96 to 1900. I never saw any meadow cut for hay over there. There was little spots there that was pasture. These are just estimates as to acreage. During the time that I was riding in that vicinity I pastured horses in the Wine Cup field. It

was fenced in. I don't remember of being in that section a year that we didn't use it either in the spring or fall. There might have been some springs we didn't camp there. I saw the Wine Cup field used for pasturing cattle, principally in the fall; possibly three or four hundred head at one time. Within the enclosure in the Wine Cup I would think there is possibly a half or three-quarters of a mile long and possibly nearly half a mile wide; it would possibly contain 160 to 200 acres.

RE-DIRECT EXAMINATION:

That place was used to bring principally beef cattle in while getting them ready to ship.

RE-CROSS EXAMINATION:

I don't think there was much improvement in the Wine Cup from between 1896 and 1912, if any at all. I would say that the area that was irrigated in 1912 was about 50 acres. I stated that there was possibly 75 or 80 acres in the Wine Cup field where there was meadow along the bottom, and possibly about 50 acres of it had been irrigated. It was the same in 1912.

W. M. WORTHINGTON, duly sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:
DIRECT EXAMINATION:

I reside at Oakley. I first became acquainted with the Wine Cup ranch in 1894, and was there practically every year after that. In that year there was about 35 to 50 acres of meadow land on the east side of the stream. That condition continued until a couple or three years ago. No hay was cut that I ever saw up to 1912; it was used for pasture.

CROSS EXAMINATION:

My father and brother used to run cattle there; that is what took me there. I was riding. I am thirty-six years old. I can recall the situation pretty well that was there twenty-one years ago. In stating that there were 35 acres of land altogether I am giving an estimate as I remember it. In years this side of that I don't know as I took any particular note, but I never seen no change in it. I would hardly think it was less than 35 acres; it might have been a little over. All of that was on the east side of the creek. There is more land on the east side of the creek included in the fences than there is on the west. On the east side there may be 160 to 180 or maybe 200 acres. Only approximately one-fifth of that was irrigated, or maybe a little more or less. I seen a ditch on the east side. All of the 35 acres was irrigated from the one ditch. It was a slough or a continuation of a plow furrow. It might have been a quarter of a mile long outside of the old field and extended maybe three-eighths of a mile down into the field and the slough, or maybe a little more. The slough was pretty good sized but the ditch wasn't much of a ditch. It looked like a plow furrow that might have been washed out a little. That is the only ditch, except there might have been a plow furrow out in the lower end. That would be a part of this ditch or combination of slough and ditch. I never saw anything at all on the west side. In 1894 I was there maybe two or three days. With the exception of two or three years I was there every year.

It may be a week or ten days sometimes, or sometimes two or three weeks, and sometimes a month, riding after horses. I was on the lands on the west side of the creek. I am not a stockholder in the plaintiff canal company. The Mr. Worthington who is mentioned as having made negotiations is a brother. I am not interested in the waters of Goose Creek.

FRANK BETZKE, duly sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley and I am quite familiar with the district represented by the maps here in question. I first made my visit on Goose Creek I believe in 1899. With the exception of 1901 and 1914, I have been at the Wine Cup from once to three times a year. In 1899 the Wine Cup ranch was brush and no meadow land upon the principal part of the place. I didn't see the irrigation in 1899. The first time I saw the irrigation was in 1903; about 50 acres was irrigated at that time on the east side of the river. For a few years after that a diversion was about the same and the acreage practically the same until about three years ago, when new development was made there. No evidences of any hay cut there.

CROSS EXAMINATION:

I never was employed at the Wine Cup or Rancho Grande. I never had anything to do with the irrigation or putting up hay there. I worked in the Wine Cup outfits when they have been camped around both places. I can't say that I was interested in

how much land was being irrigated. I never looked over the field with a view of forming a judgment as to how much land was irrigated. I couldn't help but see the ditches. I believe I would have known where the ditches were. I never made an examination for the purpose of informing myself as to where the ditches were, or as to whether I knew where all of them were. I wasn't interested at all in the question of how much land was being irrigated in those days; I am not at the present time. I was there a week ago last Tuesday. I went out to look it over and see whether there was any additional areas under cultivation. I am partly able anyway to tell how much of the land that is irrigated now was irrigated prior to 1912. I haven't much experience, if any, to judge the size of land. I would say I never measured any land. I would say the Wine Cup field is three-quarters of a mile long and between a quarter and a half a mile wide. I would say there is 130 acres altogether included within the fence. I saw meadow land on the west side of Goose Creek in the Wine Cup field; there was 30 or 40 acres. That is not included within the 50 acres that I have mentioned. I have no knowledge of that meadow being irrigated. Never saw any water turned on it. Part of it was fairly good grass land. I never seen any ditches that carried water on that land. There is no ditch and was none prior to the last couple of years. I would have seen it if there had been. Possibly better than half of the west side of the creek grew hay or pasturage.

JOHN. C. BOREN, duly sworn as a witness on behalf of plaintiffs in rebuttal, testified as follows:
DIRECT EXAMINATION:

I am a little acquainted with the country in the vicinity of Wine Cup ranch. The first time I saw it was in 1897. I was at the ranch only once after that, about ten years afterwards. In 1897 the Wine Cup ranch was fenced and there was some natural meadow on it. I should judge about 50 acres was irrigated. In 1907 when I saw it it practically looked the same to me.

CROSS EXAMINATION:

In '97 I was there from the 1st of July until along in November. I had nothing to do with the irrigation of the Wine Cup field. The 50 acres of meadow land is on the east side. There might have been some on the west side: I never paid much attention. I see a swale that run down there that used to take and divert water out and on the east side. I never saw any on the west side. I never saw anybody engaged in irrigating the Wine Cup field from the swale or any other place. There was some kind of a dam in where this swale took out, but I never saw any other dams there. One time I looked for dams, just to see how it was irrigated. I went down there with Mr. Harrell one day when I looked at it he was talking of taking a ditch out. That was in 1897. In 1907 it was irrigated just through this here wash as I call it. I did not have anything to do with the irrigation that year and I don't know who did.

RE-DIRECT EXAMINATION:

I first became acquainted with the Rancho Grande in 1897. In 1907 I was there again. I was there a week ago last Monday. I was irrigating on the Rancho Grande in 1897. The upper field and lower field was cut over for hay in 1897. I guess there was about 200 acres cut in the upper field, and maybe 60 or 70 acres in the lower field. Nothing was cut in the middle field. The middle field was used for pasture. In the lower field on the west side lying towards the creek the hay was cut practically on the bench, which runs around from the top, and the other was grass and brush. When I went there in 1907 I couldn't see that there had been any particular change. The condition was about the same. When I was there the other day I wasn't over the ranch, but from the looks down in the lower field there was more ground cleared up there; looked to be maybe a little down in there.

C. A. McCLELLAN, a witness heretofore duly sworn, being recalled on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I first visited the territory covered by Defendants' Exhibits 3 and 4 in September, 1912. Ditch No. 6, in section 19, on Exhibit 4, was not constructed at that time, but the slope stakes for the ditch were on the ground. I couldn't say as to Ditch No. 7, as I didn't go across the creek. With respect to ditch No. 5 there was no ditch there and I didn't see any cross section stakes. With respect to ditch

No. 9 I saw no ditch or cross section stakes. The condition at Spring Creek, as I saw it at that time, there was some alfalfa there. I would estimate it to be about 20 acres at that time. I didn't notice anything except alfalfa. I noticed a plow furrow right near the road where it crosses Spring Creek, and that was the only sign of a ditch I noticed at that time. There was no land in cultivation under it. This area marked in red on Plaintiff's Exhibit No. 13 was not cleared or cultivated in 1912. There were no ditches except this plow furrow which I noticed in the road. The ditch No. 10 on Exhibit No. 13 and on Defendants' Exhibits No. 3 and No. 4 was constructed at the time of my visit for probably two miles; it was newly constructed. Ditch No. 4 on the south side was cross sectioned, but not constructed. There was no cultivation under ditch No. 4 or No. 10. It was all sagebrush. Ditch No. 1 on Exhibit No. 3 was constructed in 1912. It was newly constructed and some clearing was being done, but nothing was plowed or had been put in cultivation. The condition at the Wine Cup ranch, as I noticed it in 1912, was simply an area included by fence, about half a mile long and probably a little less than half a mile wide. I went up the creek on the east side without crossing over to the west side, and I noticed no cultivation, simply a pasture. I could see no irrigated lands on the east side. Above the old Wine Cup where I have marked it red upon Plaintiffs' Exhibit No. 13 there was a force of men clearing a tract of about 40 acres in extent. I be-

lieve they were just commencing to break it. I didn't notice any ditches built to cover it. Since that time this additional tract of 40 acres has been put in cultivation, and an additional area of probably 100 acres. I would say that this new development is under ditch No. 13A and ditch No. 2 on Defendants' Exhibit No. 3. The condition on the Grande Ranch in September, 1912, as I saw it, consisted of a pasture and hay land. This was my first visit to the tract and I couldn't tell what development was new. I would be unable to state whether a tract on the southwest corner of probably 20 acres in grain at that time was on new or old land. This was the only grain that I saw on the ranch at that time.

BENJAMIN HOWELLS, heretofore duly sworn as a witness on behalf of plaintiffs, being called in rebuttal, testified as follows:

DIRECT EXAMINATION:

I am acquainted with the country covered by Exhibits No. 3 and 4, and have been for a good many years. I have been acquainted with parts of it since 1878. The ditch situated immediately above the Utah line was constructed, I think, in 1912. I have been at the Spring Creek ranch. There was a ditch constructed there, I believe, in the fall of 1912. I have been at the Wine Cup ranch. I think in the fall of 1912 there were some new lands being broken up in the vicinity of the Wine Cup. I haven't visited the Wine Cup ranch a great deal in late years until 1912. In that year immediately north of the old

Wine Cup field they were breaking up a tract of land of 40 acres or better, I would judge. I can't say what new development has been made within the last two or three years on the Grande ranch. The first time for several years that I visited it was in the fall of 1912. I could see no new development there, unless it was the breaking up of a small tract of land on the lower part of Grande field on the west side of the creek. I estimated that at 30 or 40 acres; maybe not quite that much.

CROSS EXAMINATION:

I am not prepared to say whether that was irrigated or not prior to that time. I only saw it from the road to the east of the ranch, some distance away.

RE-DIRECT EXAMINATION:

I distributed water in the early days down around Oakley under one of those decrees. The understanding that I had, the basis of those decrees was an inch of water to the acre.

W. H. MARTIN, a witness heretofore duly sworn, being recalled on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I have been acquainted with the Spring Creek ranch ever since its existence. There was some land plowed up there and put into alfalfa. I should judge it was around 20 acres. I am not positive, but I think it was in 1904 or 1905. There is some little meadow land across in the Spring Creek field. There was a kind of a bog hole, or marsh, or meadow. It

does not require irrigation. I think there is two new ditches there, built in the last two or three years. I don't know just how long they are.

CROSS EXAMINATION:

I was just riding and camping on Spring Creek. I never had any occasion to make any particular observation as to the use of water there. There is very little meadow just along the creek on the same side as the alfalfa; there is none to speak of, very little, possibly five or ten acres. There was an old ditch that comes out of Spring Creek and comes around the head of the alfalfa as I remember it. I don't know how long it is, nor where its end is. If I remember there was just the alfalfa, about 20 acres, irrigated from that ditch. I don't know how much other land was irrigated for pasturage. I don't remember any ditches from the other spring. There are no ditches there that I know anything about. No hay was cut off that bottom that I remember. It was pastured off. Animals could travel over it. These lands, including the alfalfa field, was all under fence, as I remember it. I don't know how much land was under fence.

Thereupon defendants, counsel for plaintiffs consenting thereto, introduced in evidence a certain plat, marked "Defendants' Exhibit No. 5," showing the lands belonging to the defendant Vineyard Land and Stock Company, and it was stipulated by counsel for the respective parties, as follows:

It is stipulated between the parties hereto that the defendant, Vineyard Land & Stock Company,

is the owner by mesne conveyances from the original owners thereof of the lands conveyed by the Sparks-Harrell Company, situated upon what is known as Goose Creek and its tributaries, and elsewhere, in Elko County, Nevada, by deed of date October 31, 1908, records of said Elko County, Nevada, and as shown by abstracts thereof herewith tendered to the Court and counsel for use herein, and as appear in red on map marked Exhibit 5 herein, and together with any water rights used in connection therewith, the application for lands in Sections 35, 46, 68 North, in 47, 68 North, being original applications of Williams W. Williams, the application referred to being the application to the State of Nevada for the purchase of the lands in these sections, and embracing the lands in which the Rancho Grande and Wine Cup properties are located, were made as follows, to-wit: Sections 2, 13, 11, 12, original applications to State of Nevada made July 31, 1885; that of B. R. C. Avery to parts of section 2, 12, 13 and 24, in 46, 68, being made on the 19th day of December, 1882, and that of William G. Hanford to a portion of section 35, in township 47, 68, being made on the 13th day of December, 1883, and the application to the State of Nevada by S. M. Vance to a portion of section 35 was made on the 31st day of July, 1883, and the application to the State of Nevada by John Sparks for a portion of section 35 being made to the State of Nevada on the 25th day of September, 1882, and the application of E. R. Anderson to a portion of Section 35, in 47, 68 East, to the

State of Nevada, being made on the 5th day of January, 1884, with patents to all these lands issuing from the State of Nevada on the 24th day of May, 1909, these applications being the initiation of title and right and possession of the predecessors in interest of defendant Vineyard Land & Stock Company, as shown by deed to it of date October 31, 1908.

MR. HAYS: I don't know about the matter of initiation, but for what they are worth, subject to the fact.

C. J. GRIFFITH, heretofore duly sworn, being recalled as a witness on behalf of plaintiffs in rebuttal, testified as follows:

DIRECT EXAMINATION:

I am water master for the Oakley Canal Company; have been in that position since February 1st, 1913. Previous to that I was on the North Side Canal Company since the spring of 1909. I attended the Iowa Agricultural College at Ames, Iowa, and graduated there in 1899, with the degree of Bachelor of Agriculture. I taught in the college there in the dairy department for one year, after which I went to the Agricultural College of Colorado and taught for five years. Following that I irrigated a Colorado ranch for two years. I have studied and had experience in the growth of crops under irrigation. I have studied and observed the growth of crops under the Oakley project. The lands shown on defendants' exhibit 3 and 4 are 25 to 40 miles up the stream from the Oakley project. The Oakley

project is 4,700 feet in elevation at the town of Oakley, and the lands of the defendant are somewhat higher. The contracts in evidence fix a duty of water on the Oakley project at one and one-half acre feet per acre, annually. The duty of water on the defendants' lands should be fully as high as it is on the Oakley project.

CROSS EXAMINATION:

I owned a field pretty similar to the Wine Cup field for two years in the mountains of Colorado. I never irrigated that field myself. A field such as the Rancho Grande and Wine Cup fields in proper condition should be irrigated from four to five acre inches of water per irrigation. Assuming that it was necessary to continuously run the water over the land in order to produce the best crop, the amount of water turned out at the head would be about five miner's inches per acre continuously. That would be required to keep the water running over the land at all times. I have never made any experiments to determine whether it is necessary to keep water flowing over such crops as are produced on the Wine Cup field in order to get the best results. The only experiment I ever made along that line was over alfalfa. I never had any experience at all in irrigating wild grass meadows. I have had some experience in the irrigation of pasture lands generally. For the irrigation of pasture lands more frequent irrigations and more water is required than for the irrigation of wheat farms and oat farms. Ordinarily with grain land two irrigations are sufficient,

while from three to four irrigations are necessary for pasture land. I wouldn't say that twice as much water is needed for pasture lands as for wheat lands. Most authorities say two acre feet is required on ordinary pasture land. That will give four irrigations of six acre inches per irrigation. By pasture lands I mean up-land pastures, but I do not mean such meadow lands as the Wine Cup or Rancho Grande fields. I don't know that the rule is that pasture lands, the more the water up to five or six acre feet, the better is the crop. I would say that such is not the fact. I have never determined the maximum amount that might be used without detrimental effects. In giving two acre feet as the amount for the irrigation of pasture lands, the amount turned out on the lands and the amount consumed in irrigation should be the same. The irrigation should take place with not over ten per cent. loss. I did not mean evaporation. I meant waste from the ends of the fields. Including the evaporation on an ordinary cultivated field, where say two and a half acre feet is applied in four irrigations, it is estimated that about five or six acre inches will be lost during the season in evaporation. That would probably be slightly less than for pasture lands. The evaporation would be more from the fact that it was run over all the time I believe. I know that it would take about 40 acre inches per acre for the irrigation of the Rancho Grande lands, assuming that the water was turned over and overflowed practically all of the land say ten times during the irrigation season. If the

water was running continuously over it, you would have to have a diversion in the neighborhood of five miners' inches per acre running on and off.

RE-DIRECT EXAMINATION:

The duty of water has been a study since I entered the work of teaching agriculture in the Colorado Agricultural College. I would say, however, that I was at that time more particularly interested in live stock than I was in farm crops. However, we made experiments in irrigation. In 1909 when I went to work for the North Side Company I had charge of the agricultural department of the Twin Falls North Side Land and Water Company for three years. During that time we had demonstration farms and it was a subject of study for the three years that I had charge of that department. We were gathering data all the time during that three years from 1909 to 1912. I have since continued that on the Oakley project, which has a very high duty, I believe the highest duty in the state. It has been more or less a matter of experimentation. I have had occasion to carefully observe the crops and to note the amount of water used on the Oakley project. It is not necessary to have the constant use of water on a crop such as that grown on the Wine Cup and Grande ranches. Three or four irrigations would be amply sufficient in that locality on that character of land.

The plaintiffs thereupon offered in evidence the paper on irrigation investigations on Sand Creek, in Wyoming, by B. F. Fleming, Irrigation Engineer of the University of Wyoming, published in a report of

irrigation investigation for 1902, No. 2, beginning on page 101 and extending through to the end of that paper.

C. J. FRANKLIN, produced as a witness on behalf of defendants, being first duly sworn, testified as follows:

DIRECT EXAMINATION:

I am a civil engineer and have been engaged in that business for twenty years. I am not a college man. I was able to be tutored by a couple of college men for a couple of years. I have practiced my profession in this state for something over eleven years. I have had experience in designing and supervising engineering works and reporting on engineering works, and in direct charge of construction engineering in this state, for nine years out of the eleven. I am familiar with the Rancho Grande and Wine Cup ranches. I went over to investigate the ditches taken from Goose Creek. I made an examination with the view of determining the general conditions as to irrigation and the capacity of the ditches. I made an examination of two diversions at the upper end of the Rancho Grande on the east side of the stream and one diversion on the west side at the upper end. The upper one on the east side of the stream had a capacity of 30.2 cubic feet per second. The second one on the east side of the stream had a capacity of 63 cubic feet per second. The calculations are based on accepted formulas. The controlling cross sections are at the smallest section. These sections were taken at the small sections in the ditch, because

I considered them the controlling sections. The measurements as given by me, I am satisfied, conform to the carrying capacity of the ditch. I would say that these ditches had been constructed for a number of years; that they had been constructed more than five or six years, possibly ten or eleven, or a longer period of time than that. It is impossible for me to tell the age of the ditches by inspection, but from the growth of willows on the banks and the shapes of the banks themselves, and other conditions existing, it is quite evident to me that they had been constructed a number of years. I should say easily that they had been built prior to 1912. The willows that were growing on the banks were fifteen, possibly twenty feet high. I didn't actually measure them; I observed them. Inasmuch as the willows were on the banks of the canal and in line with it I would conclude that they had started after the canals were built. I was unable at any point to see both ends of the ranch. It was too big to estimate the area of irrigated lands under the ditches. I am sure that all of the lands between the ditches and the river are susceptible of irrigation from those ditches. Upon the Wine Cup ranch there were eight ditches taken out of the creek on the upper end. Two of them from the appearance were new ditches and I did not take them. I would say that there are two forks of the stream in the Wine Cup ranch. There is a dry ditch at the time which was taken out of this stream. It was an evidence of an old channel. This ditch was about six feet wide on the bottom and about three feet deep, and there is an

old dam just below it. I took no measurements on this. The ditch was there and I inspected it at the head and made a calculation as to what it would carry if it were filled with water. The size of the ditch was estimated and not measured, and inasmuch as I turned an instrument on the country and found it to fall about 25 feet to the mile, which is another estimate, I assumed that this ditch falls about 20 feet to the mile, and if used would safely carry 70 second feet. The dam I noticed was an ancient structure; it was broken when it was there and water was flowing through it. From the appearance of the timbers it was quite an old dam. Then on the extreme east side about the center of the Wine Cup ranch is another dry ditch, which at some time has been used in connection with an old channel that extends over there, and there is a two-way box there. That portion of the box extending into this particular ditch that I described was dry, and that was a larger ditch than the other channel. It was about ten feet wide on top and about seven feet wide on the bottom and four feet deep. Assuming the same fall that I did for the other one this would carry about 170 second feet, if used. So far as these estimates themselves are concerned of distances, I think I could guess within ten per cent. of ten feet or six feet or four feet, and the volume is based absolutely upon the computations used as per estimate. These estimated capacities are, I assume, within fifteen or twenty per cent. of accuracy. Where I have the cross section of a ditch and estimate, I could estimate the

mean capacity within twenty per cent. on canals of this size. On the two ditches I gave the estimates are calculated. The cross sections were estimated and the computations were based upon the estimated cross sections. Passing over to the west channel there is a diversion there from the left side of the west channel which I was not able to get any levels or data to base a computation or with respect to the slope. I measured the channel and the cross section of the ditch and estimated the mean velocity at a foot and a half per second, and based on this estimate this ditch would carry 7.35 second feet. This would be within fifteen or twenty per cent. of accuracy. The next ditch is a diversion from the left or east side of the right fork. This one I actually measured with respect to grade and cross section and computed the carrying capacity at 15.9 cubic feet per second. The next one would be a diversion on the west side of the west fork. It was a small ditch which I actually measured the grade and cross section of. It computes .85 of a cubic foot per second. The next one is a diversion from the west side of the west fork, lower down than the other. These are all in sequence down the stream. I measured the grade, slope and cross-section of this and it calculates 2.1 cubic feet per second. The ditches that I took were old ditches, not recently constructed. I based my conclusions as to the age on virtually the same conditions as existed above at Rancho Grande. The method of irrigation employed on both Rancho Grande and Wine Cup as I observed them while there is the broad or flooding

method of irrigation. The waste water ran into other ditches or sloughs and was carried by them and re-diverted and found its way into other ditches or sloughs. The custom was to put a dam in a slough and take out a diversion, which was spread over the land, and lower down, sometimes as close as 300 feet or so, put in another dam and take out another diversion, where the stream would have assumed virtually its normal size, at two or three or four hundred feet below the dam, and then take out another diversion and so on. One particular slough that I examined had seven dams in, in about half a mile. These dams appeared to be old structures. It was hard for me to say; they were built mostly of manure and brush and were evidently quite old. From my inspection of this slough and general inspection of the country I would be satisfied that all water not lost in natural losses was returned to the stream. I mean all except what was evaporated or absorbed by plant growth. I saw it returning in some places. There is a space at Rancho Grande that I noticed that was about a quarter of a mile from the stream, but there was one canal in that distance, the canal being about 700 feet from the stream, as I remember it. I have been designing irrigation works and supervising the construction. I have written a great many reports on irrigation works of one kind or another, and have been over a great deal of portions of southern Idaho and some of Oregon, and inspected these things from the point of desiring to be acquainted with the systems and methods employed in the appli-

cation of water. That was necessary in connection with my work as an irrigation engineer. From the observations I made of the lands and the method of irrigation employed on those ranches, it is my opinion that no other method of irrigation could be employed than that which is employed there. On the Wine Cup there was more than 50 acres in grass at the time I was there and susceptible of irrigation from those ditches. I should think there would be 150 or 160 acres. I have had some experience in ascertaining from observation the area of land in given tracts.

CROSS EXAMINATION:

There is one ditch, I think, on the Rancho Grande above those which I took, that I didn't find. The first one I measured at the upper end of the Rancho Grande was the second diversion above the house on the east side. It is there on defendants' exhibit No. 1 (indicating and marking with a cross the place where the ditch was measured). I took three sections of it, one section at 300 feet below the head, one section at 800 feet below the head and one section 1,000 feet below the head. I didn't get down a quarter of a mile; I took the controlling sections. I didn't concern myself with the diversions from that ditch; I don't know whether there were any or not. The ditch was seven feet wide on top, six feet wide on the bottom and 1.8 feet deep; the grade was 12.88 to the mile. The slopes were six inches in one-eighth (one foot and eight-tenths). I took the cross section of the ditch and the grade per mile, and multiplied the coefficient of roughness by the square root of the

hydraulic radius by the size of the slope. The coefficient of roughness was .03, I think; I might say that I used .03 in all of these ditches. I didn't observe the kind of country around there. There is some granite; as to whether it is contiguous right at this immediate point or not, I don't know. The upper ditch on the west side of the Wine Cup would be about six feet on the bottom; six feet on top and three feet deep. The one I estimated at 7.35 second feet is five feet on top, three feet wide on the bottom and one foot deep; estimated velocity of one and one-half feet per second. I do not see it on defendants' exhibit No. 1. The stream isn't like that on the ground. I had no map of ditches No. 2 and No. 3, and simply located the ditches in my notes. I do not find it on the map. The old fields that I saw there run in all instances bordered by a little bench just above the ditches. They have a slope from the ditches to the river on one side and on the Rancho Grande between the river and the canal on the west side there is a level space. I took a transverse section there; and then it slopes from that canal up to the limit of the irrigated area in a very general slope; no benches. On the outside of the ditches on the Grande Ranch the land rises a little bit; it is in a valley and there are hills on both sides. Below the house there is a bench, but not above the house. In the upper end the canals come right around the foot of the slope, close down, but there is no defined bench there. It is a slope from the canals in. The lands lying outside of the ditches are foothills, with more or less precipitous slopes. Those old

ditches took in the bulk of the land that could be readily irrigated. They went along the slopes of the foot-hills, the margin of the valley. The surface of the water in the river generally is a foot, possibly eighteen inches below the level of the surrounding country. There is no evidence of the ditches having been cleaned this year. There is no deposit on the banks or anything of that nature. The first ditch I gave at the Wine Cup on the extreme north end had a capacity of 7.35 second feet. The ditch on the east side of the Wine Cup and furtherest up, is a dry ditch with a capacity of 70 second feet; it didn't have any water in. This (indicating on defendants' Exhibit No. 3) looks more like it than anything else. I didn't follow it below the head. The slough goes to the east of the head of this ditch. The ditch on the west side of the Grande, furtherest up, has a capacity of 63 second feet.

EXAMINATION BY THE COURT:

By saying that no other method of irrigation on this land could be adopted, I meant under existing conditions, the natural, unlevel state. I meant that it would have to be flooded, and that the land is somewhat irregular and in its natural state would require the flooding system to cover it all. I don't see that any other system could apply and get the water over the whole thing. What I meant to convey was that the water would need to be spread over the surface under existing conditions; that is the only thing I meant.

RE-DIRECT EXAMINATION:

Q. Did your answer have any reference to the quantity of water that is employed there as well as the method of flooding it over the surface?

THE COURT: Of course, if you ask that question, I shall have to sustain the objection to it. I understood originally that your question merely sought to elicit the answer as to whether or not it was necessary to surface irrigate or flood the land. Now, if you ask him how much water is required, I shall have to sustain the objection that has been interposed, because the witness has not shown his competency to answer that question.

MR. SNOW: I am not quite sure that I understand your Honor, or that your Honor understands me.

THE COURT: Originally when you asked the question Mr. Hays interposed an objection, and I suggested that there could be only one answer to the question. I did not assume that the witness would answer the way he did. I supposed, of course, that he would say that there were other ways in which the land could be irrigated. Plainly he is of that opinion now, as I understand. That is, that the present method of irrigation could be varied. But he now states that he simply meant to say that under existing conditions you would have to spread the water over the surface of the land. Now, if you ask him how much water is required, as I understand you do, then I shall have to sustain this objection.

MR. SNOW: That is the point on which I felt that

I was misunderstood. I am not asking how much water is required in inches or in acre feet, but whether any less quantity of water could be used than they actually used.

THE COURT: How does he know how much is actually used?

MR. SNOW: He saw it. I am not asking him in acre inches.

THE COURT: Suppose he saw it on that day, how much better off would we be there? I don't know how much was being used on that day that he was there, or two or three days. Suppose you simply get into the record that no more is being used this week than is necessary, what inference am I to draw from that? Ultimately I must make a finding here as to the date of your appropriation and the amount you are entitled to. Those are the controlling findings. Now, how would this testimony contribute to—

MR. SNOW: It is possible that your Honor's latest suggestion, as I understand it, that isn't the point, however, upon which counsel objected, or on which your Honor first suggested that an objection would be sustained.

THE COURT: It was objected to as being incompetent, and I overruled that objection, upon the assumption that you were asking for an expression as to whether or not it was necessary to flood lands of that kind. I assumed that the witness would say that you could change the system of irrigation in its details, and hence some other method could be adopted for spreading the water over the surface, and I

so understand that to be the answer of the witness now, that you could change the location of the ditches, and you might spread the water in a different way, but it would be necessary to surface irrigate in order to raise crops there. Now, you ask him whether a smaller amount of water could be used than is being used, and you say you are not going to follow it up by showing how much is used.

MR. SNOW: That is correct.

THE COURT: Now, would we be getting along at all? What help would that be to me? I have in mind all the time, in hearing this evidence, how it contributes to the finding that I must ultimately make. Would it do me any good to have this witness say that less water could be used or no less water could be used than is being used this week?

MR. SNOW: I am not sure that it would, unless there were some assumptions that might arise that the method in use there was the same that had been used. It would be probably a remote presumption.

THE COURT: Even if I were to indulge that presumption, then would it help me? Of course, you have been using this water, as many pioneers use it in the West, in the easiest way, and without very much regard to the amount used, there being no interference. However, when I come to enter a decree here, I must make some provision not only for the amount, but for the measurement of it. Evidently some change will have to be made in your system, even though it be regarded as a proper system, but there must be measuring devices, and there must

be some method of determining whether or not you are taking more at any given time in the future than the decree awards to you, and I must award to you a definite amount and establish the dignity of your right, and the mere fact that water is being used today and has been in the past, and that you can't use any less, wouldn't help me. If you will call my attention to your view of it, I will determine whether I will permit you to go ahead.

MR. SNOW: I take it that the defendant in this case is not asking to have its title quieted. There is no purpose so far as our side is concerned in establishing the dignity of our right. This, so far as the defendant is concerned, is a suit in personam, and its only purpose could be to enjoin the defendant from interfering with certain stated rights of the plaintiff, as they might be established in this suit. Therefore, it occurred to me that there might be a somewhat different rule and a somewhat different burden upon the respective parties than in the ordinary water suit.

THE COURT: Reflect a moment, Mr. Snow. Why do you put in this testimony then at all? In this decree I must say to you, either you have no right at all, and shall take no water, to the disadvantage of the plaintiff, or I must say that you have a given right, which must be defined, which is either inferior to or superior to the plaintiffs' right. If I say it is superior to it, and define it, that would simply mean that you have the right at any time to take a given amount of water, to be stated, regardless of the re-

sult of such taking upon the use lower down by the plaintiff. I can't see how I am to render a decree here without making a finding as to what your rights are, unless I hold that the plaintiff has no rights at all. That would be the only assumption upon which—the only hypothesis upon which I could avoid making a finding as to your rights. Otherwise, how could I formulate an injunctive order or an injunctive decree? If I tell you that you have a right to do some things, I must define the things that you have a right to do, in order that you may know what your rights are, and not wittingly violate the order of the Court. Is that not true?

MR. SNOW: I think it is.

THE COURT: Then must I not make a finding as to the dignity of your rights, that is, the year from which your appropriation dates, as compared with the year from which the plaintiffs' right dates? It is true that by reason of the mere fact that you are a non-resident and the lands that you irrigate are part of another state, perhaps the decree would not be effective for certain purposes, in establishing your right in the other state, but if I do what you suggest I am called upon to do in this case, I must—if I am wrong in that I should be very glad to hear you, but if I am not wrong, I can't see why you put in any testimony at all as to your right. I supposed all the way through that you were putting in this testimony in order that I might know and find and decree what your rights are.

MR. SNOW: I will say to your Honor that a

great deal of the testimony which we expected to put in in regard to the scope of our rights has been excluded under the Court's ruling, and we find ourselves in rather an awkward position.

THE COURT: For example, what testimony?

MR. SNOW: The testimony of Mr. McClellan.

THE COURT: As to what?

MR. SNOW: I perhaps am speaking of the understanding gained from the other case tried just prior to this, where the same conditions practically obtained, but we offered the testimony of two witnesses who were engineers and who had had also considerable experience in irrigation and in methods of irrigation, and were attempting to establish the extent of our—

THE COURT: You mean the duty of water?

MR. SNOW: Yes.

THE COURT: I must regret that my ruling has been a disappointment to you.

MR. SNOW: I was explaining our theory. It perhaps seemed a little anomalous to the Court.

THE COURT: The objection to this question will be sustained.

C. A. McCLELLAN, a witness heretofore duly sworn on behalf of plaintiffs, being recalled in rebuttal, testified as follows:

DIRECT EXAMINATION:

"I have made measurements of Goose Creek above the points of diversion on the Grande Ranch and below the points of diversion on the Wine Cup. The first measurement I made was above the upper field

on the Grande Ranch at about the middle of section 26. This measurement was made above all diversions. It was made September 24, 1912. At that point I found a discharge of 7.6 second feet. There was water being diverted at that time in the west ditch, the diversion of which is above the upper end of the Grande field. I didn't measure the quantity of water in that diversion. At that time I measured no ditches. The next measurement I made was below both the Grande and Wine Cup ranches, but above Little Goose Creek, probably about 100 feet above where Little Goose Creek comes into the other stream. That measurement was made a little later the same day. The discharge at that point was 3.3 cubic feet per second. On June 25, 1914, I made another set of measurements, first measuring the extreme upper east ditch on the Grande field, this being ditch No. 15, as marked on the plat, about 100 feet above the Grande upper field. 6.8 cubic feet per second was the discharge at that time. This was 7:15 in the morning. Then I measured Goose Creek proper just opposite that point. This discharge was 17.2 cubic feet per second, at eight o'clock in the morning. The measurement of Goose Creek and that ditch would be the total flow of the stream above the diversion, by adding the two together. The next measurement was made at practically the same point as the measurement made September 24, 1912, near the mouth of Little Goose Creek, and just above the junction. This measurement was made at eleven o'clock on the same morning. The discharge was 14.5 cubic feet per

second. The only discharge of a ditch of which I made a measurement was the one just given as being about 100 feet above the Grande or upper field fence. I saw that the ditch was practically full. I had nothing but a current meter to determine the carrying capacity. The ditch was carrying 6.8 second feet. The mean depth of the ditch was .95 of a foot. I didn't make a current meter measurement of the ditch on the west side at the upper end of the Grande, but I noticed that it was running full and had a little bit more water, I would say ten second feet. In my judgment that is all it would carry safely. I would say that the ditch on the east side of the Grande running near the house when running practically full would carry about eight second feet. I didn't make a gauging of that ditch. Referring to ditch No. 10 on the Wine Cup, between 7 and 8 second feet would be an estimate.

CROSS EXAMINATION:

I testified that the upper ditch on the Grande ranch on the east side was carrying 6.8 second feet when I measured it. I estimated that it would carry 10 second feet at a safe head. By safe head I mean a quantity of water in a ditch which would not endanger the banks. I couldn't say that that bank is deeply and heavily sodded the entire length of it. There is some sod. I allowed one foot of free-board. I have never seen those ditches running bank full. I can't say that it is a fact that those ditches, with the banks embedded in turf, can safely run bank full in that country. They couldn't do so in the country

in which I have been working on account of badger holes and musk-rats. I would say that a foot is the least free-board. We estimate a two-foot free-board on all laterals except the extremely small laterals; that is at first construction. I have not been engaged in work on ditches running through very nearly level meadow land. My work has been in a new country. Allowing a one-foot free-board, I would say that Mr. Franklin's capacity of 30 second feet was too high. In my experience I would say that a foot of free-board would be the length that I would allow in a ditch of that character. The width of the ditch is 7.2 feet, practically to the water line. The slopes were practically vertical; probably six feet and a half in the bottom; there is little slope there; and .95 of a foot deep. I don't know the grade of the ditch. I can estimate the capacity from having taken a current meter measurement and having determined the mean velocity. I estimated that the velocity would be a little better than a foot and two-tenths per second. I would estimate the grade to be about fifteen hundredths of a foot per hundred feet; that would be about 7.82 feet per mile. I used thirty for the coefficient of friction. That is the same as Mr. Franklin testified to. On all our new ditches we estimate .025. This was in a little worse order and more of it grown to brush and rougher and I would use the coefficient of thirty. I would say that the water could be safely raised about three or four inches higher than when I measured it. That would be about 1.25 feet. I noticed that there was some gravel on

the bottom of the creek of the east fork in making my measurements. The extreme upper stream measurement I made in 1912 was at a place where the canyon commences to be rocky. The measurement I made below the Wine Cup took into account nothing except the actual measurement as shown.

Plaintiffs then offered in evidence plaintiffs' exhibit No. 24, being a tracing of the diagram made by Mr. E. C. McClellan, from his note-book.

C. J. GRIFFITH, heretofore duly sworn as a witness on behalf of plaintiffs, being recalled in rebuttal, testified as follows:

DIRECT EXAMINATION:

I was present with Mr. McClellan when he made the water measurements at a point above the Grande ranch and below the Wine Cup ranch, that he has testified to. It was in 1914. Water was being run in the ditches between those two points at that time.

PLAINTIFFS AND DEFENDANTS THEREUPON RESTED.

On motion of the plaintiffs, the trial of said cause was opened for the purpose of enabling plaintiffs to introduce certain additional testimony.

WHEREUPON, Benjamin P. Howells, produced as a witness on behalf of plaintiffs, being first duly sworn, testified as follows:

DIRECT EXAMINATION:

I have already testified that I had charge of the delivery of water in the Oakley district, under the decrees of the Court in 1887 or 1888, and that I have lived in that country ever since that time. In 1887

or 1888 and in the subsequent years in the Oakley district the people began using the water early in the spring. The condition of the spring would govern some, but as early as March or April, as soon as the frost would come out of the ground, they would run water over it for the purpose of soaking it up and keeping it wet as long as possible, and by so doing form a kind of a reservoir or stored the moisture in the ground in that way. The reason for that early use of water was that later in the season the water would be so low that there wasn't sufficient to properly irrigate the crops. The basis of distribution there was an inch to the acre. That was the head of water that was usually given to those people.

Q. Now, I believe you testified that the water users to the north, Mr. Thatcher and others, sold their rights to those people around Oakley, and that those people re-distributed the water among themselves. To what extent was that purchase made, etc.

MR. NEBEKER: To save time, your Honor, may I have the same objection, and an exception, as I have already made, the same objection as I have already made, with reference to there being no testimony in the record tending to prove that any of the persons mentioned in the decrees offered in evidence in this case were the owners of any water rights; merely to save time, and have the point saved in the record, without repetition.

THE COURT: Very well.

MR. HAYS: Of course we can present these deeds,

but you make no point as to these deeds, I take it, under our stipulation, I understand.

MR. NEBEKER: You introduced, I think, copies of the deeds, didn't you?

MR. HAYS: Not of these particular deeds. These were not introduced. This amounted to a change of water rights from one tract to another.

MR. NEBEKER: That is involved in your last question?

MR. HAYS: Yes.

MR. NEBEKER: Well, I don't know. It might, that question isn't now before the Court, as I understand, under our arrangements.

(Last question read.)

A. Approximately eighteen—between eighteen and nineteen hundred inches was purchased from the people living at the north end of the valley, and moved up the stream and used by the people in the vicinity of Oakley.

Mr. Howells (continuing): After that the irrigation of land all took place in the vicinity of Oakley and the lands further to the north were abandoned so far as irrigation was concerned after this purchase. An inch to the acre has been the general rule all over that country in decreeing water rights, but especially at Oakley, on account, as I have stated, of the fact that it needs a large amount of water in the spring of the year to flood over the lands and wet them up good because of the shortage of water later in the season. The 2,500 inches of water which the record indicates was in the stream in July would be

used, prior to this project being started, to irrigate the orchards, gardens and fall stuff. There would not be sufficient water for grain, hay or other crops of that kind. Irrigation of hay and grain necessarily took place before July; very seldom would there be any water to irrigate hay or grain after about the middle of June. In a way I am familiar with water measurements. I was the officer of the Court in charge of the work and had occasion to measure the water out to users in the district during the time I was in charge. I have observed measurements of water since that time and have assisted in measuring water some since then. During the past two or three years I have only assisted an engineer in measuring it; that was done with a water meter. I have also watched or been present when our engineers have measured over weirs, but the water meter is the most commonly used there now. I have seen it measured frequently enough so that I believe I can, upon seeing a stream of water flowing in a ditch, make a fair estimate of the amount in inches or feet. At the time I was distributing the water under those decrees we measured it under a different rule. At the time I was water master I never had measured water by a meter or through a weir. That mode was not known in our country, so far as I know. I measured the water in many instances through a measuring box under the rules of the Court under the decree. I attempted to ascertain what number of inches or second feet there was in a stream. I think I arrived at quite accurate results under the system

used at that time. There was a certain rule or box to measure the water in under the decree as adopted by the Court. I am only using my judgment now as to the average flow of the stream for many years back. I haven't any definite recollection of any particular measurement. From my experience, observations and practice, as I have stated, an inch to the acre, under the conditions existing there, was necessary in my judgment. They began to irrigate some considerable time prior to planting time. They poured onto the land all they could use while the water continued to flow in the stream. In July and later on they would have no water at all for anything except garden and trees.

JOHN ADAMS, produced as a witness on behalf of plaintiffs, being first duly sworn, testified as follows:
DIRECT EXAMINATION:

I have resided at Oakley for about 34 years. I reside under the canal systems which have been mentioned in the testimony. I have had experience for 33 years in irrigation in that district. I have been accustomed to have water measured out to me for use. I have had occasion to make or observe water measurements so as to know what an inch of water was when I would see it. I have had a certain amount of water dealt to me and I have used it on a certain amount of land, and in that way I have determined about what was necessary and what I have used.

Q. What was the method of irrigation in the Oakley district prior to the establishment of the present reservoir?

MR. NEBEKER: This is objected to as incompetent, irrelevant and immaterial, and on the ground that there is no evidence in the record tending to show that any of the persons who claimed water rights at the time now being inquired of were in fact the owners of any water right.

THE COURT: Overruled.

MR. NEBEKER: An exception.

Mr. Adams (continuing): The water being so irregular we had to use it very early in the spring and store it in the soil. Later in the season of course the water got low and was very limited. We used the water then for potatoes, garden stuff and our trees, but our crops were made on the early water. This water is known over there by the date of the water right. They call the Thatcher water 1875 water, some of it; the Tatro water as 1877 water, and so on. We didn't depend upon any water later than the 1880 water for making crops. I couldn't say how long the 1880 water lasted, I would judge though, not later than the 1st of June, ordinarily. I have farmed 80 acres of land over there. I had about 95 inches of water for my 80 acres. That was not all one date or one right. Since the decree of the Court this water has been measured out to me in definite amounts, by some measuring device under this decree. Since 1886 I have raised alfalfa and grain generally; beets since the reservoir went in, also potatoes, garden, corn and all kind of crops that way. The main crop has been alfalfa and grain.

Q. What have you to say as to the amount of

water which it was necessary to have under the circumstances existing before the building of the reservoir for the irrigation of the land in that district?

MR. NEBEKER: This is objected to on the ground that the witness has not shown himself qualified to answer this question, and it calls for a conclusion and an opinion.

THE COURT: Overruled.

MR. NEBEKER: An exception.

THE COURT: I think I will ask him one or two questions first, however.

THE COURT:

Q. Did you say that you had or had not seen water measured under some rule, and by some sort of a box or other device?

A. I have.

Q. Have you seen it measured?

A. I have.

Q. By whom—I mean by what officer?

A. The watermaster.

Q. Appointed under the decree of the Court?

A. Yes, sir. He was appointed, I think, by the Court, the watermaster.

Q. The Court directed him to put in certain boxes, did it?

A. Yes, certain length, certain width, certain fall to them, with a certain run of water.

Q. More lately have you not seen the water measured over a weir, as it is called?

A. Yes, sir.

Q. And you have known how much is reputed to

be going over the weir you have seen, how much the engineer has stated is going over the weir?

A. Yes, sir.

THE COURT: I think I will let him answer, gentlemen.

MR. NEBEKER: May I inquire?

THE COURT: Yes.

Mr. Adams, being further examined as to his qualifications, testified:

I have never done any measuring of water myself with a water meter. I have measured with a weir only in this way: that the weir is set by the engineer and the water is turned through and the measurements are there and I look at the measurements, and that is all I know about it. I noticed on the water gauge the depth of the water. I was not able to compute the quantity of water, only the way the engineer has arranged the weir and the gauge that is put on the weir. All that I know is just by the gauge. The gauge gave the quantity of water. If the water is running at a certain depth it is marked on the gauge and that means so many inches of water running. You can have from 10 to 100 and 150 inches running. I wasn't able at any of these times to compute the quantity if I were given the depth of the water on the gauge; not a scientific man; I have never done any measuring in that way. In determining the actual quantity of water that was flowing through a weir or other device I depended upon information received from somebody else. In the earlier days at the time the water was being distributed under those

decrees I had never seen any water measured through a weir nor by a water meter, and I didn't measure any water myself at all. I simply took the stream of water given to me and assumed that it was correctly measured. As to whether or not it would actually contain 95 inches I didn't know; I am not an engineer. I took their measurement for it. I took what I understood was 95 inches for my 80 acres.

THE COURT: I think I shall let him answer.

MR. NEBEKER: An exception.

Mr. Adams (continuing):

In my experience there it has taken an inch of water to the acre and I think I have used better than that. The character of the soil there differs some, from a foot to ten or fifteen or twenty feet deep. The old land where the water was used will range from eight to twenty feet. The purpose of irrigating so early and abundantly was that we had the water then and in storing it in the soil it acted as a reservoir and fed our crops until they were matured.

THE COURT: Do you desire, gentlemen, to dictate to the stenographer what your understanding was, the one that you stated preliminarily? He was not here.

MR. NEBEKER: I think it might be well.

THE COURT: You had better do it now.

MR. NEBEKER: It is stipulated between counsel for the plaintiff and defendant that the defendant may, if it desires to do so, offer additional evidence on or before the 14th of September, with relation to the duty of water on the defendant's property in Nevada,

and that if a hearing is set for that purpose at that time defendant may also cross-examine the witnesses who have testified at this hearing; and it is also understood that at the hearing on the 14th of September, or the subsequent hearing, the defendant may offer testimony in rebuttal of the testimony that has been offered here today, and the plaintiff will have an opportunity at the same time of offering testimony in rebuttal of whatever testimony the defendant offers at that time; and it is understood that at least five days' notice shall be given by the defendant of the date of the hearing, whether the hearing is had on the 14th or at some earlier date.

MR. HAYS: I believe that it is also understood that the order and bond may stand until the final determination of the case.

Pursuant to the above stipulation the further hearing of said cause was resumed.

LOWELL P. RASMUSSEN, produced as a witness on behalf of defendant, being first duly sworn, testified as follows:

DIRECT EXAMINATION:

I am twenty-four years of age, and reside at Salt Lake City. During the present summer season, commencing with the latter part of March, I had charge of the irrigation and planting of crops on the Rancho Grande. My irrigation included the Wine Cup field. I continued to work there until the first of August. Prior to this year I have had experience as an irrigator in the southern part of New Mexico, for about five years. I have observed irrigation in Colorado,

my home state. I had about 250 acres of land in southern New Mexico. I turned the water out on the Rancho Grande and the Wine Cup fields in the latter part of March of this year. In parts of the meadows the water was taken off at periods and other places it was run continuously. I observed the effect upon the vegetation there when the water was taken away from the land for different periods. According to my observations water could be taken from the land after it had been irrigated about four days before the hay would suffer. At the expiration of that time the ground would commence to dry and the grass began to wither. I made observations for the purpose of determining whether the crop was as good on lands where the irrigation is continuous as it was on lands where the water was applied every four days. Where the water was flooded continuously there was a good deal the best crop of timothy hay. During the year 1915 there was a part of the land that was not watered as often as every four days. The longest interval I know of any part of the land not being irrigated was about six days. On the land that was not irrigated for intervals of six days the crop was stunted. The soil appears to be very porous there. It is loam with gravel underneath. The first irrigation required about three times as much water as the subsequent irrigations. The snow was off the ground when I commenced irrigation in the latter part of March.

CROSS EXAMINATION:

The method of irrigation was by flooding the land. It was not possible to use any other method on those

lands. They were not level enough so that any other method could be used. I don't think any of the land had been made level; it appeared to be in its natural condition. There was some native grass at the Wine Cup. Generally speaking my testimony refers mostly to timothy. I did the work myself. I know nothing about the measurement of water. In a day of twenty-four hours I would irrigate something like 25 to 40 acres, I guess, by flooding. There was one man helping me, and the two of us handled the water. We did not turn it off at night. I would think that the average depth of the loam was about 18 inches, with gravel immediately underneath. The depth of the ground water varies according to the time of the year. After the irrigation the water is on top; then if it is turned off the water goes down. At the end of four days it would be about two feet below the surface, I believe. I don't know where it would be at the end of six days. I would say that the surface of the water in the channel is about four feet below the general surface of the land. I think I turned the water on sometime between the 20th and 30th of March; it was right about the 25th, but I wouldn't say whether it was before or after. I haven't been on this ranch before this year. There was a piece of ground on the east side of the upper field at Rancho Grande where I turned the water off and on every four days after the 25th of March. That was on all the east side of the creek, including a portion along the creek as well as a portion further back. With reference to the location of the ground water I did

not base my testimony on any experiment I made; it was just a guess. With reference to the amount of land that I irrigated in a day, I stated it to be from 25 to 40 acres, but that was just an estimate; I did not estimate it with any degree of accuracy.

L. W. BEASON, duly sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I was at Rancho Grande during this year from about the first of August to about the 8th of September. I am twenty-seven years of age; I am a civil engineer; I was graduated from the Massachusetts Institute of Technology in 1913. Since that time I have been doing surveying, some construction work and water measuring entirely connected with irrigation. I am familiar with the modes of measuring water. I know how to measure water with a weir and am familiar with work of that kind. I have been engaged in that work for almost three years. I was at Rancho Grande at the time a small parcel of land was irrigated between the 28th of August and the 7th of September. The water placed on that parcel was measured by me. The quantity used was 13.6 acre feet, during 9.9 days. There were men in charge of the irrigation and I observed whether the water was being turned and used to the best advantage. It was handled so as to run over as much ground as possible. There were seven and a half acres in the piece that was irrigated in that experiment. For one irrigation of that piece of land it would require 1.8 acre feet. While I was there I examined some test

pits that had been dug and bored, and a borrow pit where dirt had been taken to build a levee for a stream. I examined the channel of the stream or cuts down through the Rancho Grande and the Wine Cup. The surface soil there is uniform and the subsoil is practically the same on both ranches. The surface soil is sandy loam, and it is very porous to water. Under the sandy loam in places is a layer of sand and then in other places immediately under the sandy loam is very coarse gravel and rocks. I did not find any impervious stratum in any of these pits or excavations. I don't know how deep the gravel is underneath the surface soil. I would say the average depth of the surface soil was about two feet; it varies from six inches to four feet. I did not notice the irrigation that took place on the different parts of the ranch; I didn't have anything to do with the irrigation.

CROSS EXAMINATION:

The seven and a half acres was on the east side of the upper field, above the house at Grande. It was a little south of the line drawn across the middle of the field, that is, in the south half of the field and on the east side of the stream, and immediately under the ditch that goes around the east side of the bottom land there. The land extended from the ditch down to within about 300 feet of the stream. This piece was about 800 feet long and about 350 feet wide. The method of irrigation was by flooding; the corrugation method was not tried. The ground is uneven and in its natural condition. There didn't appear to have

been any levelling of the ground. I didn't level the ground off before I made the experiment. The crop there was native grasses and some timothy. There was a strip immediately under the ditch on the east side where the native grass predominated, and the rest of it was timothy. When we started out to make the experiment we took a head of about three-quarters of a second foot. To distribute that body of water there was a ditch run along the upper side of the tract of land and the water was turned out of it and run over the land towards the stream. This was the ditch that serves the entire field on the east side. To the west of the ditch the stream is probably about 1,000 feet away. We had this strip about 800 feet long and about 350 wide in between. In turning the water out we dammed up this main ditch and ran the water over the banks. On this strip 350 feet wide by 800 feet long there were rather small ditches. I don't know how they were made originally. They looked like they might have been plow furrows. They took the water out on any little high places, and then half way across the tract toward the stream there was an old road, in which the water collects and forms a sort of a lateral, and the water was redistributed from that when it got down that far. The only ditches there were took the water out on the high points. The system used was just simply flooding in that way. The length, about 800 feet, of the strip was along the ditch. Then the strip extends down from the ditch about 350 feet. It required about six days for the water to reach the opposite side of the field, 350 feet

away. In places it got across in three days. This water was turned out in very small streams along this strip; first along a strip 500 feet long in several very small streams, and it took about three days to get down about 350 or 400 feet. The original intention was to irrigate a strip clear across to the stream, but when it got down this far we didn't have enough water to get any further with; there was such a small stream that it run in the ground. So then we diverted it along another strip down the ditch making a total length of 800 feet. We had about three-quarters of a second foot and it was turned out equally in five or six places along the ditch. Along close to the ditch I should say that the surface loam was about a foot deep and was very porous. We didn't try irrigating with a larger head of water. We didn't have any opportunity.

RE-DIRECT EXAMINATION:

We were confined at that time with reference to the quantity of water by the injunction order of this Court, to only one-fourth of what the stream contained at that point.

RE-CROSS EXAMINATION:

At that time the stream varied, but there was around the neighborhood of four second feet above the field. I don't know what the fall of the land was in the direction in which we were irrigating, but I would guess that it would be about two feet in a hundred for about 150 feet from the ditch, and then it slopes more gradually from there, it wouldn't be over half a foot in a hundred. I didn't observe as to how

far the water went the first day, or the second, across the tract. The stream seemed to trickle down out of sight pretty rapidly in that experiment.

RE-DIRECT EXAMINATION:

That particular piece of land is smooth, level hay meadow. I don't know of any process by which this land could be put into shape so that it could be more readily watered than it could be in its present condition. There is nothing about the unevenness that would interfere with the irrigation of it.

EXAMINATION BY THE COURT:

The idea was to irrigate this land exactly as it had been irrigated during the past summer. I have had no practical experience myself as an irrigator. Assuming that we had divided this tract of 800 feet long in sections 100 feet wide, which would give eight sections 100 feet wide, and we had put all of the three-quarters of a second foot upon one section at a time, in other words, if, instead of spreading it out through this long ditch over all this long piece of land, we had used this entire head of water upon a strip 100 feet wide and 350 feet long, in half an hour the land might have been covered, but it is my opinion that with this slope of the land, if you turn a second foot out so much at one place it would damage the field; it would make a wash in there in that loose soil. It is sodded and possibly it could be handled, but it would keep the irrigator very busy to do it. If the strip of land had been twice as wide as it was, the water would have never got across. I don't think that we could have irrigated the whole tract in the

course of a few hours, if, instead of cutting it into eight strips 100 feet wide, we had divided it every 50 feet lengthwise of the tract, so that it would only have to travel over a space of fifty feet. As it was the water would keep sinking away instead of spreading out over the land. The larger part of it disappeared into the ground.

RE-DIRECT EXAMINATION:

We didn't make any observations before the irrigation started as to the water plane, but after the irrigation the water plane was at one place at the level, on the surface of the land; in other places it varied from six inches to a foot.

E. C. McCLELLAN, duly sworn as a witness on behalf of defendant, testified as follows:

DIRECT EXAMINATION:

I have testified in the former hearing in this case. I was at Rancho Grande on the 27th and 28th of August, and there again on the 7th, 8th and 9th of September. The irrigation that Mr. Beason has testified about was made under my direction. I instructed the man who had irrigated the land to irrigate as much land as he could with the water supply he had, in exactly the same way he had done during the season; that is, placing the same amount of water on the land, and turning it out from the ditch in the same amounts. I was not there during all the time of this experiment. I had nothing to do with the measurement of water which was used. I assisted Lew Beason in making the measurement of the land irrigated. For the purpose of determining the char-

acter of the surface and sub-soil, I had several holes sunk with a post-hole digger, as far as they could be sunk, and then I had two pits dug with pick and shovel, on different parts of the land at Rancho Grande in the same field as the irrigating was done. The post-holes there were dug around the exterior of the irrigated land. One pit was dug on the east side of the creek, about a quarter of a mile above the irrigated land, and the other on the west side of the creek, perhaps 100 yards away. Two holes were dug with a pick and shovel and five with a post-hole digger. The top soil in those holes for some twelve inches to two feet was a sandy loam; then came the fine sand lower down, with some stones in some of the pits. Below that was the water gravel. The holes were 42 to 54 inches deep. From my recollection of the Wine Cup field, where the creek is cut down to four or five feet in depth, the formation there is very similar to what it was on the upper field at Rancho Grande. I would say that what we found in those post-holes is characteristic of the formation all over Rancho Grande where the meadow lands are. In some places it was gravel from almost the top clear down as far as there has even been any cutting. In one of the pits I dug we had over two feet of fine loam, and then struck the water gravel immediately under that. There was no fine sand between the loam and the water gravel. Soil of that character takes a large quantity of water. It is what you would call porous soil.

CROSS EXAMINATION:

Water would run through it readily. One hole was located at the southwest corner of the land that had been irrigated on the east side of the creek, I should judge about 400 feet away. In that hole there was 24 inches to fine sand. At 44 inches there was coarse sand; at 47 inches there was rocks and we couldn't get any deeper. We struck boulders so the post-hole digger wouldn't go through. The next hole was located at the southeast corner of the tract that was irrigated, about 200 feet from the ditch and about 600 feet from the creek. The land that was irrigated was in the shape of an "L." The southeast corner was quite a ways from the ditch and below where the water had been turned out above. The base of the L, the long way, was on the side to the creek. The top of the L was on the ditch side. It was the road going through there that created this L. In that hole there were 14 inches to sand; 24 inches to coarse sand, and at 54 inches we struck something down there that seemed to be rock. The top soil was shallower than it was in the first hole. The next hole was about 100 feet east of that, and was a little bit that was being irrigated from water from the upper tract. My instructions had been that just as quick as the piece of land they had under irrigation had been irrigated as thoroughly as it had been during the summer season, to then turn the water down on another piece and irrigate until I came, to see how much land we could cover; and this was a ditch

that extended to the lower part of the L, about half way down. This third place was you might say on a line between the first and second, up the ditch. There it was sandy loam. At 26 inches it commenced to get moist; at 40 inches we got gravel. At 42 inches we struck hard pan, or rock and had to quit. The next hole was about half way along on the west side, towards the creek and half way up towards the upper end. It was perhaps 350 feet from the ditch and perhaps a little further from the creek. It was sandy loam to 32 inches, and sand and gravel down to 47 inches, and then from 47 to 50 inches it was pretty good sized stones mixed with gravel, and then we struck something larger that stopped our post hole digger. The next one was at the northwest corner of the irrigated tract, about 300 feet from the ditch. It was sandy loam down to 14 inches; then it was sandy or sand down to 37 inches, when we struck gravel and stones; at 44 inches we were stopped by striking rocks.

CALEB TANNER, being duly sworn as a witness on behalf of defendants, testified as follows:

DIRECT EXAMINATION:

I reside at Provo, Utah; am forty-six years of age; am an irrigation engineer. I was graduated from Harvard University in 1895 with the degree of Civil Engineer. Since graduation I have devoted practically all of my time to irrigation engineering. I was with the United States Geological Survey from 1899 until 1903; with the United States Reclamation Service from 1903 to 1905; State Engineer of Utah

from 1905 to 1913. From 1913 until the present time I have been connected with two irrigation companies in Utah, the Provo Reservoir Company and the Utah Lake Irrigation Company, largely in an advisory capacity, and detailed particularly to furnish and collect evidence with referense to the duty of water. I have read the literature of the subject and have become acquainted with all of the experiments made by the several agricultural colleges of the arid states, and also the general texts that have come from irrigation engineers and experts, government officers and private individuals. There has been no part of the time since my graduation for the last seventeen years when I was not engaged in some capacity in connection with the use of water. The character of irrigation in vogue in the different places where I have made investigations has included the irrigation of grains, forage crops and fruits, and practically all kinds of crops grown in the Great Basin. My investigations have extended with an entire degree of intimacy from the extreme south end of Utah to the extreme north end, a distance of 300 miles. In the course of my investigations I have had occasion to determine the quantity of water that was necessary to produce hay crops, forage crops, such as alfalfa, timothy and natural meadow. These particular investigations I carried on in the Sevier Valley, between Panguitch and Circleville, at an elevation of six thousand and three or four hundred feet. There is a considerable stretch of native hay meadow at that place. My observation was confined

to the areas under two ditches that were in the vicinity of a little town called Cleveland, the area being approximately between two and four hundred acres. I measured the volume of the water in the canal. The area of the land that was served by the ditch I obtained from the report of the owners or water masters, and the particular information with reference to the rapidity of irrigation I obtained from observing the progress the irrigator was making during an interval I was in the vicinity. At that time I ascertained and determined approximately what the duty of water was for that area and for that kind of crops. I investigated with reference to forage crops, especially native hay crops and timothy, in the area known as the Provo Valley. That is in the mountains east of Provo, at an elevation of five thousand and two or three hundred feet. It was timothy and red top meadows. I carried on investigations there for two years, 1913 and 1914. When I began there I was in the employ of the Provo Reservoir Company, and made the investigations for that company. The Provo Reservoir Company is plaintiff in an action seeking a settlement of claims to the use of the waters of Provo River. The owners of land in this area were claimants and we were seeking to determine the extent of their reasonable necessities to grow forage crops in that area along the stream. I was endeavoring to find out whether they needed all of the water that they contended they needed up there. There was a conflict of interest between the Provo Reservoir Company and

the farmers using water on those hay lands. From those investigations I gathered sufficient data and found out to my own satisfaction what the reasonable duty of water was on those lands. I have seen Rancho Grande and Wine Cup. I was there the latter part of last week and the fore part of this week, for two days and a fraction. I went over the upper field above the house, the Rancho Grande field below the house, and the Wine Cup field. The soil is sandy loam for an average depth of about three feet; the sub-soil is gravel; I don't know to what depth it extends. I made observations as to the location of the ditches on those properties and the lay of the land, the irregularities, if such existed, in the surface, and conditions that would affect irrigation there. My purpose was to form some basis, so far as I was able in that interval, for a judgment as to the requirements of that land to grow the kind of crops that were on the ground. I had sufficient time to look over the superficial conditions, the general soil conditions and the character of the crop that was grown there. I looked at the ditches and their location with reference to the surface of the land, to determine whether or not they were reasonable well adapted to the irrigation of those lands, economically. They were adapted to the irrigation of those lands. I would say that so long as the lands are used for the growing of forage crops, such as exist there, that no other system of irrigation or ditch construction could be adopted by which an appreciably greater economy in the use of water

could be brought about on the east side. On the west side of the upper field, particularly in the upper end of the field, considerable improvement might be made there at rather a high expense. There are some rather strong irregularities that make the use of water less advantageous than it would be, as it exists at the present time. I mean by plowing it up and levelling down the land and re-seeding it. That is the only way it could be done. On the Wine Cup field, if the diversions were concentrated in the upper end, and the crossing over the natural sloughs made with structures, in my judgment it would economize the use of water down there. I understand the elevation of land to be in excess of five thousand feet there. I would say that irrigation should be commenced there not later than the 1st of May. Irrigation of the land would be profitable as early as you could get the water. There is an advantage in irrigating grass lands before the frost is out of the ground and before the plants start to grow. The physiological reasons for that are obscure, but it is a certainty that the plant is benefitted. Those grass lands that receive early and copious irrigations make better forage and greater hay tonnage than if that is omitted, and they are only treated with water at such time as the soil moisture is reduced so that it is below the best condition for growth, so far as the presence of water is concerned. Now there may be some injury done if the water is kept continuously on a very tight soil, but it is recognized that on a well-drained, open soil, that the application of water,

even before the time that the plant requires it for the absorbtion into the tissues of the plant, is a benefit and a very important benefit, to the plant. The explanation as to why that is so isn't determined exactly. There are several theories covering it, but it is a matter of practical certainty that the result comes, better forage and better grass, with early irrigation. Assuming that the snow goes off about the middle of March, or the latter part of March, I would say that irrigation shouldn't begin later than the 1st of May, so far as the necessities of plant growth are concerned. The benefits that come from early irrigation are rather incidental. They consume a great deal of water without a very large compensation for its use. They bring some advantage to the plant of importance, not very great importance, and they are not necessary to the life of the plant. As soon as the plant starts to grow it needs moisture. There is in that section some water that is present in the soil from the winter precipitation, and in these mountain valleys it is ordinarily sufficient to supply the plant, so far as water supply is concerned, but if that water is standing in the soil without movement, the roots of the plants lodged in it, as soon as they start to grow, have no body of oxygen to perform their functions with. If you put on some water and start the circulation you carry in air with the water, and the plant will start green quicker under irrigation before the first of May than it would if you let the soil remain with only the natural supply that came from the clouds in the form

of snow or rain. My judgment is that in that character of field, with good drainage like that, some advantage would be done to the crop by irrigation as early as March, but it wouldn't be necessary for furnishing the water supply for the crop growth, because there is sufficient in the soil. These other incidental advantages would be brought to the crop by this earlier irrigation. If the winter snow fall and rain fall isn't sufficient to fill the soil with the water content that it will hold, up to four or five inches per foot of soil, then it ought to be irrigated, because four or five inches in a foot of soil is necessary for the most satisfactory growth of the crop itself. Ordinarily at an elevation of five thousand to fifty-five hundred feet the hay is cut in the month of July. Irrigation is reasonably necessary after the hay is cut for the growth of pasturage. It is almost universal that these fields, devoted to these hay meadows, are valuable for pasturage after the hay is off, if they are kept growing to get that advantage. The water is kept on as long as the frost is out of the ground. I should say that irrigation could be ordinarily advantageously applied at least until the 1st of September, and might in many seasons continue for some period after that. I think I have a fair judgment from my observations there at Rancho Grande and from my investigations of other tracts of a similar character in different parts of the country, and from my knowledge in general, as to about what the duty of water is for the irrigation of those lands. In my judgment it would be

four acre feet per acre. The duty of water when it is spoken of in acre feet ordinarily is the application of the water to the surface of the land; when you speak of it in second feet you mean the diversion from the natural stream. In ascertaining the number of second feet that should be applied to land it is necessary to take into consideration the necessary losses in getting the water onto the land; also some lost running off the land at the ends, and things of that kind. In estimating four acre feet I do not take into consideration any of those losses. It is water actually applied to the land.

CROSS EXAMINATION:

My education at Harvard was conducted along the lines of civil engineering and not along agricultural lines. After leaving Harvard I was engaged in teaching for a year or two, part of the year, and part of the year in agricultural work, as a farmer, until 1899, when I entered the service of the United States Geological Survey. I was with the Survey until 1903 and after that with the Reclamation Service. Then I was State Engineer. I can't say when I took up the question of the agricultural problem with respect to the duty of water. I had been raised on a farm, knew what the duty of water meant, and had paid some attention to the literature on irrigation when I was a very young man. I carried on detailed experiments from as far back as 1899. For the irrigation of this land I would approve of the flooding method. On tracts like this one man should handle about four or five cubic feet of water a second.

That, I think, would be a desirable head to handle. There are some exceptional areas there where a greater head might be thrown out, but the desirable amount I think to be put in one man's hands shouldn't exceed four or five second feet for the best results. By taking four feet, for instance, the area one man could get over in twenty-four hours would depend a little on where he was operating. He ought to get over the ground with an application of four to six acre inches per acre of land. That is usually considered a pretty fair irrigation and is a fair standard. The use of a large head of water is sometimes to get speedily over the ground, and sometimes there are other justifications. If you have a steep sloping ground it would be very undesirable to use a big head. Sloping ground exists there in some cases. Some areas of considerable extent all along the east side of the upper field and along the east side of the field below the house, the slopes are steep and the irrigation head used should be small for each opening. The land is also sandy on the east side of the upper field. I don't think that it would be desirable to make a run in excess of about 200 or 225 feet. Then you come to the relatively flat body of the meadow, and that could, of course, be irrigated by bigger heads, let out at openings there it most conveniently could be applied. The east side of the upper field is rather an unfavorable point on the property for irrigation; you couldn't use as large a head there.

My judgment is that, based upon experience in

like elevations in Utah, that ordinarily to supply the water required for plant growth, the land should be irrigated about the 1st of May under normal conditions. This year was really an unusually dry year all over the country. I would not irrigate it the last time in July; it ought to be irrigated if the best results are to be had from that character of crop, until in September. For the production of the hay crop irrigation in July would probably be the last irrigation. I would say sometime between the 5th and the 20th of July. I would say that the hay would be cut from the middle of July to the 1st of August. If the land had been irrigated with application of four to six inches, I don't think it would take over two or three days to dry it out so that they could cut it. They could begin haying at any time after the 15th of July. The grasses there are largely native grasses, or native meadows. The crop that was taken off was there in stacks, scattered out among the willows and in uncut places. It is red top, wire grass, clover, timothy, part native and part of it you would term tame hay; it was a mixture. The mass of the roots of the plants in two places where detailed examination was made, where the meadow was in good condition, reached down to about a foot and a quarter. Some root extension was observed as far down as two feet and a quarter, but that character of crop is a shallow-rooted crop. When fully saturated that soil will hold about five inches of water, or about 35 to 45 per cent. by volume; it would be I should say up to 25 per cent. by weight. I am familiar with the

discussion of the question of the amount of moisture that was most satisfactory for the growth of a plant. It entirely depends upon the character of the soil. In a sandy loam the optimum is about ten to fourteen per cent. dry weight. I made observations to see where the water table is there. There was irrigation in the Wine Cup field that I observed. In 1914 I had five or six fields in Utah. The water used upon those fields, measured every time the irrigation was made for the year: One was the Hansen tract, five acres of land—this is from memory, I do not have the detail here—about two acres of alfalfa, a strawberry patch, a raspberry patch, a potato patch and corn patch. The alfalfa was watered every six and three-quarters days. The application of water ranged from two and a half to three inches to the application. The mountain meadows examined at that time were further away. I have carried through no detailed systematic experiments with the meadows. It was a matter of occasional observation, more or less. It depended upon the report of the irrigator or water master. For such land as would produce a good crop of wheat in the vicinity of the Grande and Wine Cup ranches, it would require about three acre feet; I think it would take 25 per cent. less for wheat than it would for those other crops that are growing there now. It would require about the same for oats as for wheat. If I were going to grow wheat there, I wouldn't irrigate it ordinarily until it had got a fairly satisfactory growth, up in the neighborhood of the 15th or 20th

of June. On a sandy loam I would irrigate every eight or ten days. You can't very well talk about the needs of the plant unless you speak about the avenues to get the moisture to it. In some of these valleys they can plant their crop in the fall, and in some they can't. That is rather a local matter, as to whether you can make a successful fall planting. For fall planting I don't think it would take as much water as it would for spring planting, to get a fairly vigorous plant growth in the fall of the year. I should say the grain would be harvested sometime in the neighborhood of September, probably the last week in August. Spring oats or wheat would ripen somewhere about the first of September. Fall grain ought to ripen about a couple of weeks earlier.

There is a work of first importance on irrigated farming, written by Mr. Hillgard. It is "Hillgard on Soils." Mr. Hilgard treats of agriculture under irrigation with great detail. It is entitled "Hillgard on Soils," but it has all this other matter in it. King, the professor of agriculture in the University of Wisconsin, writes four works on agriculture, with which I am familiar. There are seven or eight bulletins of the Agricultural College of Utah bearing particularly on this question. I am not familiar with Dr. Widtsoe's book, but I am familiar with his bulletins. Dr. Widtsoe is a recognized authority on the subject of irrigation. He has conducted a great many experiments at Logan. I am familiar with the publications of the University of Washington, at Corvallis, and those issued by the Agricultural Col-

lege of New Mexico, and with the agricultural publications of those stations. I am familiar with Dr. Fortier's book on the use of water in irrigation. I am not familiar with Professor Olin's work on irrigation farming. I have a good many of the publications of the University of Idaho, but I don't recall that publication. In some instances Professor Olin is right where he states in his work on American Irrigation Farming, at page 270: "The practice of flooding these native meadows for weeks at a time is prejudicial to the best growing of the cultivated grasses seeded in the native sod. It drowns out the most desired grass and encourages weed grasses of little economical value for hay. Some of the finest of wire-grass meadows produce a hay which sells above the best timothy in markets where its feeding value is known. These native wire-grass meadows, which require a large amount of water to produce the best growth, have been most seriously injured through over-irrigation." Where the soils are tight soils, and the drainage is poor, Mr. Olin is exactly right. Where the soils are open and the drainage good, he is wrong. The wire grasses are in great plenty in the lowest part of the Wine Cup, in the upper end.

As to Dr. Widtsoe's statement at page 280 of the book called "Principles of Irrigation Practice": "These and other grasses, especially the native grasses, are often grown on the large ranches of the West. One crop is ordinarily harvested and the aftermath pastured. As early as possible in the spring,

these fields are covered with immense quantities of water, which often stands for days, 1 to 2 feet deep. It is believed that under such conditions the frost is taken out of the soil, and a larger quantity of hay is obtained. The experiments at our service indicate that all hay crops are injured by an excess of water, and that the best yields are obtained only by moderate irrigations. The immoderate use of water on such ranches should be discontinued, for it is an absolutely senseless practice." I don't think that statement is correct; it would be against my judgment, so far as my experience goes.

Irrigations are given primarily to supply a deficient water requirement in the soil. The benefits of earlier irrigation are outside of that benefit. If the winter has been dry and your upland meadow has deficient moisture, irrigation will do both.

RE-DIRECT EXAMINATION:

Water let out from the lateral onto sloping ground, where the irrigation length is comparatively short, might run over it without penetration. In order to irrigate it you have got to make penetration, which takes time. A few minutes isn't going to accomplish the thing at all. The necessity of holding the water on the slope long enough to make the penetration requires that it be held there, and the minimum amount get away. It requires that the water be held there in very small streams, or it will go off the slope, probably into the lower country, where it will over-irrigate part of the flatter area.

DEFENDANT RESTS.

W. M. WORTHINGTON, being duly sworn as a witness on behalf of plaintiff, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley; I have been associated for a number of years in farming on these mountain meadows or valley ranches, particularly on the Horse Shoe ranch and the Jews Harp ranch, on Goose Creek. These ranches are about 20 to 25 miles north and a little east of the ranches of the defendant. They are right down the stream on the same creek. I am familiar with the defendants' ranches; have been on them. I can't see much difference in the character of the soil on the country on the ranches I have worked on as compared with the defendants' ranches; just the same crops grow on both. My father and brother have owned ranches since I was a small boy, and I have been on them off and on ever since for 20 or 25 years. I have irrigated myself on the Horse-shoe and Jews Harp ranches practically every season up to the last couple or three years. The soil there is from 1 to 2 or more feet sandy loam, with gravel underneath. I haven't made a test of that but I know from the looks of the creek. It is situated in the valley between hills along the creek. Native grasses, timothy and red top have been grown there. The fields are generally flooded in the spring from high water, naturally. The water is thrown out by the floods and beaver dams and things that might be in the creek, and then we generally try to irrigate it once or twice after that. We would irrigate about the 1st of July, the last time. The time when the

floods ordinarily go off so as to leave the land dry varies with years. I would say that a fair average would be along about the middle of April, or the first of May. This year we only irrigated once, and we didn't have the flood water either. Sometimes we irrigate twice. I believe we could get a little better results with two irrigations, if you can get them at the right time. I think a ton or a ton and a quarter per acre would be a good crop of native grass. I think that is a fair average in the Goose Creek country. I don't think it is necessary to irrigate every four or five days. I have never tried it, but I don't see but what we raise about as much hay as the rest and we don't do it. I don't know of any reason why more water should be used on the Grande and Wine Cup ranches. We generally start in between the 25th of July and the 1st of August to cut the crop. The Jews Harp ranch is about two miles north of the Utah line, in Idaho, on Goose Creek.

CROSS EXAMINATION:

There is a decreed water right for that land. I think we claim to have enough water to irrigate it as fully as it need be. We used to have a little trouble several years ago. There are about 200 acres in the Jews Harp ranch. In the Horseshoe ranch I believe there is 989 acres. The width of the meadow area is from a few hundred feet to a quarter of a mile. I don't know what the average depth of the stream would be, but I would say that the surface of the land is about four or five feet above the bed of the stream. In the ordinary run of water the surface of the

stream, I would say, would be about four feet below the surrounding land. There are beaver dams in the natural streams through this land. In places it holds the water back. The land receives sub-irrigation as a result of these obstructions. It subs across a forty-acre piece. I don't think the lower part of the meadow land received sub-irrigation as a result of those obstructions in the stream. It doesn't become necessary every year to take out the obstructions in the stream to harvest the crop. In the lower part we don't harvest it on the Jews Harp. There is a forty-acre strip in that. We don't harvest it because there is too much water. It results from the beaver dams in the creek. We cut about 60 acres for hay I think on the Jews Harp. I don't think that part receives sub-irrigation; there might be a little. I know one place on the lower field, about fifty feet from the creek, when the water comes in the spring it bores the roots out, cuts the ground out around the willows, and in July the water is down about four or four and a half or five feet; that is the only place that I know anything about the ground water. I never did any boring for the purpose of ascertaining how high the ground water was at different seasons of the year. On the Horseshoe ranch I think they mow about 400 acres, as near as I could guess, at the present time. It has been about three or four years since I had anything to do with the irrigation of that land. There is no natural overflow in that field. All of the water used for irrigation is taken out through the ditches. There might be a very little sub-irrigation on the

bottom there. The elevation of the ground water in that field I imagine would be about the same as the Jews Harp; I do not know, but that is my judgment. I observed that when we had our floods and they continued for a long time and deposited a wash-out on the meadows, and the water stood there, we didn't have near as good a crop as we did when it flooded over and would go off and give it a chance to grow. I haven't noticed a whole lot of timothy and red-top on the Rancho Grande the last two or three years. On the upper field I believe it is a good meadow, up to the last two years. I don't believe it is as good as it was a couple of years ago. I mean below the house. The Wine Cup field has been used as pasture, and they haven't produced hay there like they have in the upper field. There is a very good thrifty growth on the Rancho Grande, but the bottom of the Wine Cup I have never paid so much attention to. It was just used as pasture, and was a good pasture all right.

RE-DIRECT EXAMINATION:

As to the hay crop on the Rancho Grande I never made any measurements but I believe they used to cut more hay than they do now. I think the meadow was better formerly. I have heard some of the irrigators I believe say that they used to use quite a lot of water, but I don't know whether they used any more than they do now.

WALTER T HOLT, being duly sworn as a witness on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I have resided at Oakley, Idaho, for about nine years. I owned one of these mountain ranches in the

northwest corner of Box Elder County, Utah, about 25 miles east from the Wine Cup and Grande ranches. I believe it is a little higher. The general character of the soil was about the same as those described as mountain valley ranches, sandy loam of a foot and upwards and underlaid with gravel. On my ranch I had wild meadow, a mixture of hays and grasses. I had wire grass, blue grass, and what I called wild rep-top. I cultivated this ranch and raised hay there for about 20 years, between 1884 and 1906, along in there. I got off a ton or a little better to the acre. I irrigated twice each season. I would commence sometimes the latter part of May and sometimes along about the 8th or 10th of June. The last time I would irrigate would be along about the last of June or up until the 10th of July. I would cut my crop along about the last of July or the 1st of August. I did not find it necessary to irrigate every four or five days. I had 160 acres in the wild meadow. I would use a head of water along about 150 inches to irrigate with. It would require me with that head about 14 days to irrigate the 160 acres. My observation is that a ton or a little more is a fair crop per acre for native grass.

CROSS EXAMINATION:

My property was located on one fork of the head of Raft River. In the spring of the year there was some natural overflow of the land. The low meadow land would be overflowed. I guess there would be 30 or 40 acres overflowed on some of it, and some of it wouldn't be; it all depends on the size of the flow in

the spring of the year. The flooding took place ordinarily along in March and sometimes in April. Not very much of the land was sub-irrigated because I had quite deep channels running through it, and it drains itself pretty well. Usually this meadow land is quite moist up to July, with the spring rains and the overflow of the land. There were some high places. On the high places the grass didn't die particularly; I would start in to irrigate and start the water on the high places and the low places would take care of themselves. The irrigation that I gave it those two seasons of the year would keep the land moist until the hay was harvested. Some seasons it would be a little different, of course. I would have to start in some seasons probably a little earlier than others, but on an average that is about the time of season I would start in to irrigate this land. Two irrigations would keep the land sufficiently moist to preserve the hay and cause it to continuously grow until the harvest time. The land would be pretty good and moist most of the time; not up to the surface, but it would make a good crop. I can generally tell by the hay whether it is drying out or whether it is thriving. It should have continuous moisture to cause the hay to grow. Hay of that character will cease growing the moment all of the moisture gets out of the soil.

JOHN C. BOREN, being duly sworn as a witness on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley, Idaho. I had a mountain valley

ranch at Oakley in what is now the Oakley reservoir, about 20, maybe 22, miles from the south line of the State of Idaho. It is down Goose Creek from the other ranches. I had 128 acres and irrigated about 70 or 75 acres. The soil was a foot or more of sandy loam, with gravel underneath; the same conditions about as along all those creeks. I have been on the Grande ranch. I irrigated down there one summer. On this ranch of mine I raised about a ton to the acre, on natural wild meadow. I irrigated from once to twice, depending upon the overflow of the creek. I cut the hay along the latter part of July or the 1st of August. To irrigate the 75 acres I took a head of water of 75 to 100 inches. I would leave that on the ground 14 or 15 days, maybe, at a time, running it over there. I irrigated on the Grande ranch in 1897. I went there that year about July 1st. I irrigated alfalfa. I did not irrigate the native grass; I did nothing only just while we were putting up the alfalfa, we had it on the upper field. They cut native grasses that there year. To my best recollection I think we took that water off somewhere about the 10th. We cut it along about the first of August and took the water off and let it dry out. I don't believe, to the best of my knowledge, it is a good thing to put water on every four or five days. I did not find it necessary to do that.

CROSS EXAMINATION:

My property was bottom land, the biggest part of it. The creek ran practically down through it. It extended only for a short distance on either side. It

received its water from Trapper Creek on one side and from Goose Creek on the other. Take it most any ordinary year most of the land overflowed more or less; it would overflow that low land. I never had a failure of crop there. Under my method of irrigation I kept the ground moist until harvesting. It seemed to hold the water pretty good. The ground was kept moist up to harvesting time.

RE-DIRECT EXAMINATION:

The overflow affects practically all of the ranches along Goose Creek in the same way. When I speak of overflow I mean the high water in the spring which brings it above the banks and floods all over the land; it goes clean across them. That is very often the case all up and down that creek ever since I have been there. I don't think there is any particular difference between my place and the Grande.

S. P. WORTHINGTON, being duly sworn as a witness on behalf of plaintiffs, testified as follows:

DIRECT EXAMINATION:

I reside at Oakley, Idaho. I am somewhat familiar with the irrigation of these mountain ranches, particularly with what is known as the Horseshoe ranch and the Jews Harp ranch, located near the boundary line between Nevada and Idaho. Native grass grows on these ranches. The frequency of irrigation upon these ranches depends largely upon the character of the year. When we have a very wet season and the creek overflows the grass early in the spring, and then recedes, why we have raised a splendid good crop of hay with one irrigation afterwards. In years

when that doesn't occur it requires two good irrigations to mature the crop of hay. I have been acquainted with the Grande ranch and the Wine Cup. I first visited them in 1880. I was there quite frequently up until 1900. I think I was there most likely every year. In some parts of the Rancho Grande field, to the best of my observations, while I never made particular investigation, it would be the same character of soil as at the other places. I believe in the upper part of the Grande field there is a portion of that soil that is perhaps a little more sandy than the soil down in the Horseshoe and Jews Harp ranches. That is on the east side where this experiment was made that has been testified to.

CROSS EXAMINATION:

I would say this from general observations, because I never made any particular investigations. I rather think that the form employed in irrigating the Jews Harp and Horseshoe ranches would be to keep the ground moist so that the hay would grow. It wouldn't be necessary to have it flooded all the time in order to do that. The nature of timothy and the nature of red-top also will stand some drouth without killing, but it will not grow the moment the soil dries out around the roots. It must be damp and have some moisture. That is true of any crop.

BOTH PARTIES REST.

PLAINTIFFS' EXHIBITS.
PLAINTIFFS' EXHIBIT NO. 1.
ARTICLES OF AGREEMENT.

Hailey, Idaho, Serial No. 0307.

BETWEEN

James Rudolph Garfield, Secretary of the Interior, for and on behalf of the United States of America, and

F. R. Gooding, Governor, for and on behalf of the State of Idaho.

These articles of agreement, made and entered into this 13th day of November, A. D. 1908, by and between James Rudolph Garfield, Secretary of the Interior, for and on behalf of the United States of America, party of the first part, and F. R. Gooding, Governor, for and on behalf of the State of Idaho, party of the second part,

WITNESSETH, That in consideration of the stipulations and agreements hereinafter made, and of the fact that said State has, under the provisions of section 4 of the act of Congress approved August 18, 1894, of the act of Congress approved June 11, 1896, of the act of Congress approved March 3, 1901, through James Stephenson, Jr., its proper officer, thereunto duly authorized, presented its proper application for certain lands situated within said State and alleged to be desert in character, and particularly described as follows, to-wit:

List No. 23.

Total acreage 43,693.56.

and has filed a map of said lands, and exhibited a

plan showing the mode by which it is proposed that said lands shall be irrigated and reclaimed, and the source of the water to be used for that purpose, the said party of the first part contracts and agrees, and, by and with the consent and approval of Theodore Roosevelt, President thereof, hereby binds the United States of America to donate, grant and patent to said State, or to its assigns, free from cost for survey or price, any particular tract or tracts of said lands, whenever an ample supply of water is actually furnished in a substantial ditch or canal, or by artesian wells or reservoirs, to reclaim the same, in accordance with the provisions of said acts of Congress, and with the regulations issued thereunder, and with the terms of this contract, at any time within ten years from the date of the approval of the said map of the lands.

It is further understood that said State shall not lease any of said lands or use or dispose of the same in any way whatever, except to secure their reclamation, cultivation and settlement; and that in selling and disposing of them for that purpose the said State may sell or dispose of not more than 160 acres to any one person, and then only to bona fide settlers who are citizens of the United States, or who have declared their intention to become such citizens; and it is distinctly understood and fully agreed that all persons acquiring title to said lands from said State prior to the issuance of patent, as hereinafter mentioned, will take the same subject to all the requirements of said acts of Congress, and to the terms of this contract, and shall show full compliance there-

with before they shall have any claim against the United States for a patent to said lands.

It is further understood and agreed that said State shall have full power, right and authority to enact such laws, and from time to time make and enter into such contracts and agreements, and to create and assume such obligations in relation to and concerning said lands as may be necessary to induce and cause such irrigation and reclamation thereof as is required by this contract and the said acts of Congress; but no such law, contract, or obligation shall in any way bind or obligate the United States to do or perform any act not clearly directed and set forth in this contract and said acts of Congress, and then only after the requirements of said acts, the regulations thereunder, and this contract have been fully complied with.

Neither the approval of said application, map, and plan, nor the segregation of said land by the Secretary of the Interior, nor anything in this contract, or in the said acts of Congress, shall be so construed as to give said State any interest whatever in any lands upon which, at the date of filing of the map and plan hereinbefore referred to, there may be an actual settlement by a bona fide settler, qualified under the public land laws to acquire title thereto.

It is further understood and agreed that as soon as an ample supply of water is actually furnished in a substantial ditch or canal, or by artesian wells or reservoirs, to reclaim a particular tract or tracts of said lands, the said State, or its assigns, may make

proof thereof under and according to such rules and regulations as may be prescribed therefor by the Secretary of the Interior, and as soon as such proof shall have been examined and found to be satisfactory patents shall issue to said State, or to its assigns, for the tracts included in said proof.

The said State shall, out of the money arising from its disposal of said lands, first reimburse itself for any and all costs and expenditures incurred by it in irrigating and reclaiming said lands, or in assisting its assigns in so doing, and any surplus then remaining after the payment of the cost of such reclamation shall be held as a trust fund to be applied to the reclamation of other desert lands within said State.

This contract is executed in duplicate, one copy of which shall be placed of record and remain on file with the Commissioner of the General Land Office, and the other shall be placed of record and remain on file with the proper officer of said State, and it shall be the duty of said State to cause a copy thereof, together with a copy of all rules and regulations issued thereunder or under said acts of Congress, to be spread upon the deed records of each of the counties in said State in which any of said lands shall be situated.

In testimony whereof, the said parties have hereto set their hands, the day and year first herein written.

JAMES RUDOLPH GARFIELD,
Secretary of the Interior.
STATE OF IDAHO,

(Seal)

By F. R. Gooding.

APPROVAL.

*To All to Whom These Presents Shall Come,
Greeting:*

Know ye that I, Theodore Roosevelt, President of the United States of America, do hereby approve and ratify the attached contract and agreement, made and entered into on the 13th day of November, 1908, by and between James Rudolph Garfield, Secretary of the Interior, for and on behalf of the United States, and F. R. Gooding, Governor, for and on behalf of the State of Idaho, under section 4 of the act of Congress approved August 18, 1894, the act approved June 11, 1896, and the act approved March 3, 1901.

THEODORE ROOSEVELT.

“F”—C. C. K.

GENERAL LAND OFFICE.

Railroad Grants and Right-of-way Division.

November 9, 1908.

It is hereby certified that this contract has been examined and compared with the duplicate, and found to be identical therewith; that the tracts therein described are duly indicated on the map filed with said contract, and are shown by the records of this office to be vacant and unappropriated.

It is further certified that the records of this office have been examined; the lands were not returned as mineral, are not in conflict with any mining claim, location, or entry, and are not within any withdrawn coal area.

CHARLES H. KERAN,

S. S. MARR,

Examiner.

Chief of Division.

State of Idaho,
County of Ada,—ss.

I, N. JENNESS, Register of the State Board of Land Commissioners of the State of Idaho, do hereby certify that the foregoing is a true and correct copy of Agreement with the Government covering Segregation List No. 23, except the land description, as same is on file in my office.

IN WITNESS WHEREOF, I have caused the seal of the State Board of Land Commissioners to be affixed this 23rd day of April, 1915.

N. JENNESS,
Register.

(Seal)

PLAINTIFFS' EXHIBIT NO. 2.

(Plaintiffs' Exhibit No. 2 is the form of agreement between the State of Idaho and the Twin Falls Oakley Land and Water Company, entered into on the 12th day of August, 1909, and is the same as Exhibit "A" attached to the Bill of Complaint and set forth in the printed transcript herein.)

PLAINTIFFS' EXHIBIT NO. 3.

No. 5027.

APPLICATION FOR PERMIT

To Appropriate the Public Waters of the State of Idaho.

1. Name of Applicant, Samuel H. Hays. Postoffice address, Boise. County, Ada. State, Idaho.
- II. The financial resources of the applicant are:
 - (d) Other resources: \$10,000.00.
2. The quantity of water claimed is 500 cubic feet per second.

3. Source of water supply: Goose Creek (or Oakley Creek), County of Cassia.
4. Location of point of diversion: In SE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 18, Tp. 14 S., R. 22 E. B. M. The $\frac{1}{4}$ corner between Secs. 17 and 18, T. 14 S. R. 22 E. B. M., bears N. 11° 10' E., 2190 feet.
5. To be used for:
 - I. Irrigation and domestic use:
 - (a) Amount of land to be irrigated: 84,561 acres, as per exhibit B.
 - (b) In the following legal subdivisions: See list, exhibit B, herewith.
6. Estimated cost of works: \$800,000.00.
7. Description of works for diversion:
 - I. Kind of works: Dam and ditch.
 - II. Dimensions of works:
 - (Reservoir)
 - (a) Height of dam 135 feet, length of dam at top 810 feet, length of dam at bottom 50 feet. Diversion dam height 6 feet, length 50 feet. Material used in construction: Stone, concrete, earth, wood.
 - (b) Capacity of reservoir: 63,000 acre feet.
 - (c) Size of headgate: Width 33 feet, height 10 feet.
 - (d) Conduit East Side canal, width at bottom 16 feet.
Conduit West Side canal, width at bottom 16 feet.
Width at water line, East Side, 36 feet.
Width at water line, West Side, 49 feet.

Depth of water 5½ feet. Diameter of pipe,inches.

Average grade per mile is 1.58 feet.

Length of conduit is: East Side 12, West Side 10.4, 22.4 miles, and it crosses the following quarter sections: See list Exhibit "A" to land described in 5-I-(b) above which is the point of intended use.

8. Time required for the completion of the construction of such work is five years.
9. Time required for the complete application of the water to the proposed use is four additional years.

BE IE KNOWN that the undersigned hereby makes application for a permit to appropriate the public waters of the State of Idaho as herein set forth.

SAMUEL H. HAYS,

Applicant.

Remarks: The reservoir dam is locate in Sec. 12, T. 15 S. R. 21 E From this point the stream is used as a conduit until the point of diversion specified in par. 4 is reached.

It is particularly intended to appropriate hereby the flow of the stream outside of the irrigation season, between November 1st and April 1st, and also flood waters as well as the natural flow of the stream.

APPROVAL OF STATE ENGINEER.

The number of this permit is 3751.

Date of first receipt of application, 4:50 p. m., March 27, 1908.

Returned to applicant for correction April 26, 1908.

Corrected application received June 15, 1908.

Recorded in Book 10, Page 3751. Approved June 17, 1908.

This is to certify that I have examined the within application for a permit to appropriate the public waters of the State of Idaho and hereby grant the same, subject to the following limitations and conditions:

Good and sufficient bond to be filed in the sum of \$1,000, on or before August 16, 1908.

One-fifth of the work above specified to be completed on or before December 17, 1910.

The whole of said work to be completed on or before June 17, 1913.

The time for proof of beneficial use of water appropriated in accordance herewith to extend to June 17, 1917.

Witness my hand this seventeenth day of June, 1908.

JAS. STEPHENSON, JR.,
State Engineer.

Deed, dated 14th day of July, 1909, from Samuel H. Hays, of Ada County, State of Idaho, to Twin Falls Oakley Land and Water Company, which grants, bargains, sells, assigns and transfers unto said company, "All of the rights acquired by the said Samuel H. Hays under and by virtue of the Proposal and Request heretofore made by him to the State Board of Land Commissioners of the State of Idaho, on the 15th day of June, 1908, and the amended proposal and Request made by him to said Board on the 21st day of June, 1909, said Proposals being for the construction of certain irrigation works constituting

what is known as the Oakley Project, in Cassia County, State of Idaho, and said Requests being for the segregation of approximately fifty thousand (50,000) acres of land in said county, being List No. 23, filed in the United States Land Office, at Hailey, Idaho; also all of the following described appropriations of water from streams in Cassia County, State of Idaho, made for the use and benefit of the said Oakley Project, and said appropriations of water being evidenced by the following permits issued by the State Engineer of the State of Idaho, to-wit:

Permit No. 3751 for 500 second feet of the waters of Goose Creek; Permit No. 4734 for 300 second feet of the waters of Cottonwood Creek; Permit No. 4732 for 300 second feet of the waters of Little Cottonwood Creek; Permit No. 4735 for 300 second feet of the waters of Birch Creek; Permit No. 4733 for 200 second feet of the waters of Basin Creek; also any and all other permits taken out by said party of the first part for use in connection with the said Oakley Project."

Certificate and acknowledgment in due form as required by the laws of Idaho attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 9:00 A. M. May 21, 1913.

F. P. KING, State Engineer.

PERMIT NO. 3751.

CERTIFICATE OF COMPLETION OF WORKS.

To All Whom It May Concern:

This is to certify that the Twin Falls Oakley Land

& Water Company, of Milner, County of Twin Falls, and State of Idaho, the holder of Permit No. 3751, issued upon Application No. 5027, bearing date of priority of March 27, 1908, authorizing the diversion of 500 second feet of the waters of Goose Creek (or Oakley Creek), County of Cassia, State of Idaho, for irrigation and domestic purposes, has fully complied with the provisions of the laws of the State of Idaho relating to the proof of completion of works of diversion set out and described in said permit; that said works are adequate for diverting and conveying to the place of intended use 500 second feet of the waters of Goose Creek; that the point of diversion of said waters is at a point in the SE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Sec. 18, T. 14 S., R. 22 E. B. M., and that the lands proposed to be irrigated by the use of said water are described as follows, to-wit:

* * * * *

Witness my hand this 19th day of July, A. D. 1913.

F. P. KING,

State Engineer of the State of Idaho.

Bond: From Samuel H. Hays, as principal, and D. C. MacWatters and Fentress Hill, of Milner, Idaho, as sureties, to the State of Idaho, in the sum of \$1,000.00, for the faithful completion of works of diversion as specified in Application No. 5027 and Permit No. 3751, in the manner and form prescribed therein and within the time therein allowed.

Affidavit of justification of sureties in due form attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 4:00 p. m. August 10, 1908.

JAS. STEPHENSON, JR.,

Approved:

State Engineer.

Date, Aug. 14, 1908.

Jas. Stephenson, Jr.,

State Engineer.

Certificate in due form by State Engineer of the State of Idaho, dated the 24th day of April, 1915, that the foregoing documents, constituting Plaintiffs' Exhibit No. 3, are full, true and correct copies as the same appear on file in the State Engineer's office.

PLAINTIFFS' EXHIBIT NO. 4.

No. 6317.

APPLICATION FOR PERMIT

To Appropriate the Public Waters of the State of Idaho.

1. Name of applicant: S. H. Hays.

Postoffice address: Boise. County: Ada. State: Idaho.

II. The financial resources of the applicant are:

(d) Other resources, \$10,000.

2. The quantity of water claimed is 1000 cubic feet per second.

3. Source of water supply: Goose Creek, County of Cassia.

4. Location of point of diversion: SW $\frac{1}{4}$ Sec. 17, Tp. 14 S. R. 22 E.

5. To be used for:

I. Irrigation and domestic use:

- (a) Amount of land to be irrigated: 60,000 acres.
- (b) In the following legal subdivisions: See List A, herewith, and map.
- 6. Estimated cost of works: \$750,000.
- 7. Description of works for diversion:
 - I. Kind of works: Reservoir, dam, ditch, flumes.
 - II. Dimensions of works:
 - (a) Height of dam 143 feet, length of dam at top 1100 feet, length of dam at bottom 250 feet. Material used in construction: Earth, stone, concrete, steel.
 - (b) Capacity of reservoir: 70,000 acre feet.
 - (c) Size of headgate: Width 10 feet, height 10 feet.
 - (d) Conduit ditch: Width at bottom 40 feet, width at water line 52 feet, depth of water 6 feet. Average grade per mile is 2 feet. Length of main conduit is $\frac{1}{2}$ mile, and it crosses the following quarter sections: See List B herewith and map, to land described in 5-I-(b) above which is the point of intended use.
- 8. Time required for the completion of the construction of such work is 5 years.
- 9. Time required for the complete application of the water to the proposed use is 4 additional years.

BE IT KNOWN That the undersigned hereby makes application for a permit to appropriate the public waters of the State of Idaho as herein set forth.

S. H. HAYS,
Applicant.

REMARKS: These waters, together with the waters appropriated in Applications numbered 6318, 6319, 6320 and 6321, are to be collected in a reservoir above a dam to be built in Sec. 19, Tp. 14 South, Range 22 East, B. M., thence to be distributed through distribution system shown on map herewith.

APPROVAL OF STATE ENGINEER.

The number of this permit is 4731.

Date of first receipt of application: 9:00 a. m.,
March 10, 1909.

Returned to applicant for correction: April 9, 1909.

Corrected application received: June 7, 1909.

Recorded in Book 13, Page 4731. Approved June 7,
1909.

This is to certify that I have examined the within application for a permit to appropriate the public waters of the State of Idaho and hereby grant the same, subject to the following limitations and conditions:

Good and sufficient bond to be filed in the sum of \$2,000 on or before August 6, 1909.

One-fifth of the work above specified to be completed on or before December 7, 1911.

The whole of said work to be completed on or before June 7, 1914.

The time for proof of beneficial use of water appropriated in accordance herewith, to extend to June 7, 1918.

Witness my hand this 7th day of June, 1909.

JAS. STEPHENSON, JR.,
State Engineer.

Deed, dated 9th day of May, 1914, from S. H. Hays to Twin Falls Oakley Land and Water Company, which grants, bargains, sells, assigns and transfers to said company "That certain water permit No. 4731 for 1,000 second feet of the waters of Goose Creek, Cassia County, Idaho, as the same appears of record in the State Engineer's Office, at Boise, Idaho, in Book 13, at page 4731."

Certificate of acknowledgment in due form as required by the laws of Idaho attached.

Endorsed: Received and filed for record in the office of the State Engineer at Boise, Idaho, at 4:45 p. m., June 1, 1914.

F. P. KING,
State Engineer.

Permit No. 4731.

CERTIFICATE OF COMPLETION OF WORKS.

To All Whom It May Concern:

This is to certify that the Twin Falls Oakley Land & Water Company, of Wilmington, County of, and State of Delaware, the holder of Permit No. 4731, issued upon Application No. 6317, bearing date of priority of March 10, 1909 authorizing the diversion of one thousand (1000) second feet of the waters of Goose Creek, County of Cassia, State of Idaho, for irrigation and domestic purposes, has fully complied with the provisions of the State of Idaho relating to the proof of completion of the works of diversion set out and described in said Permit; that said works are adequate for diverting and conveying to the place of intended use six hundred (600) second feet of the waters of Goose Creek; that the points of diversion of

said waters are as follows: From reservoir in the NE $\frac{1}{4}$ of Sec. 19, T. 14 S. R. 22 E. B. M., Oakley reservoir subdivisions; No. 1 in NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec. 19; No. 2 in SW $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 17; No. 3 in NW $\frac{1}{4}$ of SW $\frac{1}{4}$, Sec. 17; all in T. 14 S., R. 22 E. B. M.; that the waters appropriated under said permit are used in conjunction with waters appropriated under Permits Nos. 4732, 4733, 4734, 4735 and 3751; that the lands proposed to be irrigated by the use of said waters are described as follows, to-wit:

* * * * *

Witness my hand this 18th day of March, A. D.
1915.

J. H. SMITH,

State Engineer of the State of Idaho.

BOND: From S. H. Hays, as principal, and The Title Guaranty & Surety Company, a corporation of Pennsylvania, surety, to the State of Idaho, for the sum of \$2,000.00; to secure the completion of the irrigation system specified in application numbered 6317, and permit numbered 4731. Said bond is in the form and is executed in the manner required by the laws of the State of Idaho.

Endorsed: Approved, Date Aug. 6, 1909.

JAS. STEPHENSON, Jr.

State Engineer.

Received and filed for record in the office of the State Engineer at Boise, Idaho, at 11 a. m. August 6, 1909.

JAS. STEPHENSON, Jr.

State Engineer.

Certificate in due form by State Engineer of the State of Idaho, dated the 24th day of April, 1915, that the foregoing documents, constituting Plaintiffs' Exhibit No. 4, are full, true and correct copies as the same appear on file in the State Engineer's office.

PLAINTIFFS' EXHIBIT No. 5-A.

(Plaintiffs' Exhibit No. 5-A is the form of agreement entered into between the Twin Falls Oakley Land and Water Company and purchasers of water rights for Carey Act lands included in the Oakley project, and is the same form of agreement as is attached to the Bill of Complaint, marked Exhibit "B," and appears herein in the printed transcript of said Bill.)

PLAINTIFFS' EXHIBIT No. 5-B.

(Plaintiff's Exhibit No. 5-B is the same as Plaintiffs' Exhibit No. 5-A, with the exception of modifications made to apply to persons purchasing water rights for lands other than Carey Act lands.)

PLAINTIFFS' EXHIBIT 5-C.

Oakley Old Water Rights. *Contract No.*

TWIN FALLS OAKLEY LAND AND WATER
COMPANY.

Agreement.

This Agreement, Made in duplicate this day of, 19.., between the Twin Falls Oakley Land and Water Company (for convenience hereinafter called "the Company") a corporation organized

and existing under the laws of the State of Delaware, party of the first part, and. (for convenience hereinafter called "the Purchaser"), of, State of., party of the second part, witnesseth:

That the Company has heretofore entered into a contract with the State of Idaho, acting by its State Board of Land Commissioners, whereby the Company bound itself to construct a system of canals and irrigation works for the reclamation and irrigation of certain lands therein described and referred to, which contract is of record in the office of the Register of the State Board of Land Commissioners at Boise City, Idaho, and is dated August 12th, 1909, and is hereinafter called the "State Contract."

That the Company has heretofore entered upon the work of construction of said irrigation system for the purpose of diverting the waters of various streams under the appropriations set forth in the State Contract.

That the State Board of Land Commissioners, pursuant to law and its rules and regulations, has notified the Company that it may proceed to sell or contract rights to the use of water flowing and to flow through the canals and rights to and in said system of irrigation works, pursuant to law and to the terms of said contract with the State.

That the Purchaser has made application to the Company to be permitted to purchase, so far as possible on the same terms provided for Carey Act entrymen, the rights and privileges by said contract

provided, to the extent hereinafter named, which said application has been accepted by the Company.

That in consideration of the covenants and agreements hereinafter contained, it is agreed in pursuance of the State Contract that the Purchaser shall become entitled to shares of the capital stock of the Oakley Canal Company, the certificate thereof to be in the form as follows, to-wit:

OAKLEY CANAL COMPANY.

. Shares. , 19 . . .

This is to certify that is the owner of shares of the capital stock of the Oakley Canal Company.

This certificate entitles the owner thereof to a water right of one and one-half acre feet of water for each acre of the following described land:

E. B. M., containing acres in Cassia County, State of Idaho, in accordance with the terms of the contract between the State of Idaho and the Twin Falls Oakley Land and Water Company, dated August 12, 1909, and this certificate also entitles the owner to a proportionate interest in the dam, canal, irrigation works and water rights, together with all the rights and franchises attached thereto, based upon the number of shares finally sold in accordance with the said contract between the said Company and the State of Idaho.

OAKLEY CANAL COMPANY,

By President.

Attest: Secretary.

Said certificate to be delivered as provided for in said State Contract and under the conditions therein stated, and as provided in an escrow agreement between the parties hereto, dated, 1909.

The water which the Purchaser shall have the right to conduct and receive through the said canal system shall be used upon and the water shall become dedicated and be appurtenant to the land above described and none other.

And the parties hereto expressly agree as follows, to-wit:

1. This agreement is made in accordance with the provisions of said contract between the State of Idaho and the Company, which together with the laws of the State of Idaho under which this agreement is made, shall be regarded as defining the rights of the respective parties, and shall regulate the provisions of the shares of stock to be issued to the Purchaser by the Oakley Canal Company.

2. The Company agrees that so long as it retains control of the Oakley Canal Company, to-wit, so long as it shall continue to vote a majority of the stock of said Company, as provided by the State Contract, that it will cause said Company to keep and maintain the said irrigation system in good order and condition and to cause any necessary repairs thereto to be made as soon as practicable and expedient.

Said Oakley Canal Company is to have power to levy all necessary tolls, charges and assessments upon all users of water in proportion to their respective holdings of stock, whether water is used or not, and

the Company hereby agrees that the annual charge for maintenance shall not, during the period described in the State Contract, exceed the sum of 35 cents for each and every acre, to be charged against the entire acreage irrespective of the irrigation thereof. The Purchaser agrees to pay said charges at the office of the Oakley Canal Company on the first day of April of each year, without notice.

3. The consideration for the water rights hereby agreed to be conveyed is the transfer and conveyance to the party of the first part of all water rights belonging to or owned by the Purchaser in streams, the waters of which are to be used for the irrigation of lands mentioned in the State Contract.

The rights of the Purchaser in and to the irrigation system and water rights used in connection therewith shall be the same as those of other stockholders in the Oakley Canal Company.

4. The Purchaser hereby covenants and agrees that upon default in the payment of any of the payments above specified, the Company may proceed either in law or in equity to collect the same, and to enforce any lien which it may have upon the water rights hereby contracted, or upon the lands to which said water rights are dedicated, or may at its option proceed to enforce any remedy given by the laws of Idaho to the Company against the Purchaser.

5. It is agreed that no water shall be delivered to the Purchaser from said irrigation system while any sum is due and unpaid from the Purchaser to the Company or while any toll or assessment is due

and unpaid from the Purchaser to the Oakley Canal Company. Water shall be delivered through said irrigation system only during the irrigation season, between April 1st and November 1st of each year. A domestic supply when necessary outside of the irrigation season shall be delivered under such rules and regulations and under such terms and conditions as shall be determined by said Oakley Canal Company.

This contract is made pursuant to and subject to the contract between the Company and the State of Idaho and the existing laws of said State. This agreement shall bind the heirs, successors and assigns of the respective parties. No charge shall be made by the purchaser for necessary right of way for canals.

7. All notices given to second party by the first party hereto or its assigns may be sent to second party by mail to the address hereinbefore given.

In Witness Whereof, The parties have hereunto subscribed their names, and the Company has caused its seal to be affixed the day and year above written in duplicate.

TWIN FALLS OAKLEY LAND AND WATER
COMPANY,

In the Presence of:

By.....
Vice-President.

.....

.....
Assistant Secretary.

.....

.....
Purchaser.

.....

By.....
Attorney in Fact.

Witnesses.

State of Idaho,
County of Twin Falls.—ss.

On this....day of....., in the year 191...,
before me,, a Notary Public in and for
said County and State, personally appeared.....
known to me to be the person whose name is sub-
scribed to the above instrument and acknowledged
to me that he executed the same.

Attest my hand and official seal the day and year
in this certificate first above written.

(Seal.)Notary Public.
My commission expires.....

State of Idaho,
County of Twin Falls.—ss.

....., 191..., before me,, a Notary
Public, in and for said County and State, personally
appeared.....known to me to be the person
whose name is subscribed to the above instrument
as the attorney in fact of.....and acknowl-
edged to me that he subscribed the name of.....
thereto as principal and his own name as attorney
in fact.

Attest my hand and official seal the day and year
in this certificate first above written.

(Seal.)Notary Public.
My commission expires.....

I hereby certify that the above is a true copy of
the original contract in the above matter.

Attest:.....
Assistant Secretary Twin Falls Oakley
Land and Water Company.

PLAINTIFFS' EXHIBIT No. 8.

Water Right Agreement.

Know All Men By These Presents: That I, the undersigned owner of the following described land, in County of Cassia, Idaho, viz:....., having and owning a water right in.....creek or its tributaries covering said described land, which rights was secured under and by virtue of a certain decree of the district court of the Fourth Judicial District of Idaho in and for Cassia County, entered and recorded on the 9th day of April, 1892, in the suit of.....et al., plaintiffs vs.et al., defendants, and claiming under the award made under said decree to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... with priority dating from....., and to..... 19.., for the amount of.....inches of water, for and in consideration of the benefits that would accrue to me from the building of a reservoir or reservoirs, to impound and conserve the waters of Goose Creek, Birch Creek, and such other streams and

their tributaries as may be found practicable and desirable and the construction of a modern canal system, which will make practicable the systematic and economical distribution and use of the waters of the above mentioned streams; thus largely increasing the duty of the water, and making possible the fullest development of the resources of the community in which I am interested, I hereby agree to waive, surrender and transfer, my water right above mentioned being all of my water rights from said streams, and agree to take and accept, in lieu thereof, from the company or individual constructing the above said reservoir or reservoirs and canal system, a paid up water right contract of acres of land situate in Cassia County, Idaho, described as follows, to-wit: Said above mentioned water right contract to convey and transfer to me, under the form of contract approved by the State Board of Land Commissioners, the same amount of water per acre under the same terms and conditions as water is sold to settlers on Carey Act lands, under the contract to be hereafter entered into between the builders of the above mentioned irrigation system and the State of Idaho. The number of shares transferred in lieu of the right surrendered are

A domestic supply, when necessary, outside of the irrigation season, shall be delivered under such rules and regulations and under such terms and conditions as shall be determined by the operating company.

It is further agreed by Reservoir Company im-

pounding the waters of Goose Creek and tributaries, to sell water at the rate of \$40.00 per acre, for all patented lands now held by settlers, that will not be covered or irrigated through the above exchange.

The transfer of water rights shall take place whenever the paid up water contract is issued to water owners by Reservoir Company.

Dated this....day of....., 1908.

Signed, Sealed and Delivered in the

presence of: (Seal.)
..... (Seal.)

State of Idaho,
County of.....—ss.

On this....day of....., in the year....., before me, B. P. Howells, a notary public in and for said county, personally appeared.....and....., personally known to me to be the same persons whose names are subscribed to the within instrument, and each duly acknowledged to me that they executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

.....
.....

PLAINTIFFS' EXHIBIT No. 9.
Water Right Deed.

This Indenture, made this....day of....., in the year of our Lord one thousand nine hundred and nine, between.....of....., County

of Cassia, and State of Idaho, the party of the first part, and the Twin Falls Oakley Land and Water Company, a Delaware corporation, the party of the second part,

Witnesseth, That the said part. . of the first part, for and in consideration of the sum of One Dollar, lawful money of the United States of America, to in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, do. . by these presents bargain, sell, remise and release forever, unto the said party of the second part, and to its successors and assigns forever, all the following described real property, situated in Cassia County, State of Idaho, to-wit:

All that certain water right belonging to the said part. . of the first part, and consisting of a right to the use of inches of the waters of Goose Creek, in Cassia County, State of Idaho, said waters of Goose Creek, in Cassia County, State of Idaho, said water right having been decreed to the said part. . of the first part, or to predecessor in interest under the decree of the District Court of the Fourth Judicial District of the State of Idaho, in and for Cassia County, in the suit of Mary H. Botzet vs. George Chapin, et al. Said judgment and decree was entered and filed in the said Court, on the 19th day of March, 1892. It being intended hereby to convey all of the rights of the said part. . of the first part, to the waters of said Goose Creek.

Together with all and singular the tenements, hereditaments and appurtenances thereunto belong-

ing or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof.

To Have and To Hold, All and singular the said property, together with the appurtenances unto the said party of the second part and to its successors and assigns forever.

In Witness Whereof, The said part..of the first part ha..hereunto set.....hand and seal., the day and year first above written.

..... (Seal.)

..... (Seal.)

Signed, sealed and delivered in the presence of:

.....

.....

State of Idaho,

County of Cassia.—ss.

On this....day of....., 1909, before me, B. P. Howells, a notary public in and for said County, personally appeared.....known to me to be the person whose name.....subscribed to the within instrument, and acknowledged to me that.....executed the same.

In Witness Whereof, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

.....Notary Public.

(FORM FOR ENDORSEMENT:)

Water Right Deed.to Twin Falls Oakley Land and Water Co. Dated....., 19... State of Idaho, County of Cassia. I hereby certify

that this instrument was filed for record at request
of.....at....minutes past....o'clock, ..M.,
this....day of....., 19.., in my office, and duly
recorded in Book.....of Deeds at Page.....
.....Ex-Officio Recorder, by.....
Deputy. Fees, \$.....

PLAINTIFFS' EXHIBIT No. 10.

Territory of Idaho, Cassia County.

*District Court, Third Judicial District, in and for
said County.*

Martin Oklebery, H. M. Thatcher, et al.,

vs.

C. H. Karlson, et al.

This Cause having been regularly called and tried
by the referee, J. T. Morgan, Esq., and the findings
of fact and conclusions of law and the decisions
thereon in writing, having been duly rendered which
are now on file in this cause.

It is now therefore ordered, adjudged and decreed:

I.

That Laura L. Thatcher have and enjoy the free
and uninterrupted use of one hundred and sixty inch-
es of the waters of Goose Creek in Cassia County,
Idaho Territory, for the purpose of irrigation, from
and after the first day of April, A. D. 1875, con-
tinuously.

II.

That the said George Chapin have and enjoy the
free and uninterrupted use of two hundred inches of

the waters of Goose Creek, in said County and territory for the purpose of irrigation, from and after the first day of April, A. D. 1876, continuously. Subject however to the prior right of the party aforesaid.

III.

That the said George Chapin and Harriet Stout, heirs at law of Maria and Elizabeth Chapin, have and enjoy the free and uninterrupted use of one hundred and twenty inches of the waters of Goose Creek in said county and territory for the purpose of irrigation, from and after the first day of April, A. D. 1876, continuously. Subject however to the prior rights of the parties aforesaid.

IV.

That the said J. F. Tatro have and enjoy the free and uninterrupted use of one hundred and seventy inches of the waters of Goose Creek in Cassia County aforesaid, for the purpose of irrigation, from and after the first day of July, 1877, continuously. Subject nevertheless to the prior rights of the parties before mentioned.

V.

That the said W. C. Martindale have and enjoy the free and uninterrupted use of eighty (80) inches of the waters of Goose Creek in said County and territory aforesaid for the purpose of irrigation from and after the first day of May, 1879, continuously. Subject, however, to the prior rights of the parties before mentioned.

VI.

That the said George Craner, have and enjoy the free and uninterrupted use of forty inches of the waters of Goose Creek in the county and territory aforesaid, for the purpose of irrigation, from and after the first day of May, A. D. 1879, continuously. Subject, however, to the prior rights of the parties aforesaid.

VII.

That said R. A. Hunter have and enjoy the free and uninterrupted use of forty inches of the waters of Goose Creek, in said county and territory, for the purpose of irrigation, from and after the first day of May, A. D. 1879, continuously. Subject to the prior rights of the parties aforesaid.

VIII.

That the said Thomas McBride have and enjoy the free and uninterrupted use of the one hundred and sixty inches of the waters of Goose Creek in the county and territory aforesaid, for the purpose of irrigation, from and after the first day of May, 1879, continuously. Subject, however, to the prior rights of the parties aforesaid.

IX.

That the said C. C. Haynes have and enjoy the free and uninterrupted use of three hundred and twenty inches of the waters of Goose Creek, in said county and territory, for the purpose of irrigation, from and after the first day of February, A. D. 1880, continuously, subject, however, to the prior rights of the parties aforesaid.

X.

That Martin Okleberry, have and enjoy the free and uninterrupted use of one hundred and sixty inches of the waters of Goose Creek, in said county and territory aforesaid, for the purpose of irrigation from and after the first day of March, A. D. 1880, continuously. Subject, however, to the prior rights of the parties aforesaid.

XI.

That H. M. Thatcher have and enjoy the free and uninterrupted use of one hundred and sixty inches of the waters of Goose Creek, in said county and territory aforesaid, for the purpose of irrigation, from and after the 23rd day of March, A. D. 1880, continuously, subject, however, to the prior rights of the parties aforesaid.

XII.

That Andrew Eliason enjoy the free and uninterrupted use of one hundred and forty inches of the waters of Goose Creek in the county and territory aforesaid, for the purpose of irrigation, from and after the 27th day of April, A. D. 1880, continuously. Subject, however, to the prior rights of the parties aforesaid.

XIII.

That said George Whittle shall enjoy the free and uninterrupted use of eighty (80) inches of the water of Goose Creek. in said county and territory, for the purpose of irrigation, from and after the 27th day of April, A. D. 1880, continuously. Subject, however, to the prior rights of the parties aforesaid.

XIV.

That said C. H. Karlson have and enjoy the free and uninterrupted use of twenty inches of the waters of Goose Creek in said county and territory aforesaid for the purpose of irrigation from and after the 27th day of April, A. D. 1880 continuously. Subject, however, to the prior rights of the parties aforesaid.

XV.

That the said C. E. Harris shall have and enjoy the free and uninterrupted use of one hundred and sixty (160) inches of the waters of Goose Creek in said county and territory, for the purpose of irrigation, from and after the first day of November, A. D. 1880, continuously. Subject, however, to the prior rights of the parties aforesaid.

XVI.

That the said owners of the Western Canal No. 1 have and enjoy the free and uninterrupted use of four hundred inches (400) of the waters of Goose Creek in said county and territory, for the purpose of irrigation, from and after the first day of March, 1881, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said owners of the Furguson and McBride Ditch No. 4, have and enjoy the free and uninterrupted use of three hundred and twenty (320) inches of the waters of Goose Creek in said county and territory from and after the first day of April, A. D. 1881, continuously, for the purpose of irrigation. Subject, however, to the prior rights of the parties aforesaid.

That the said owners of the said Tolman Ditch No. 7 and enjoy the free and uninterrupted use of two hundred inches of the water of Goose Creek, in said county and territory, for the purpose of irrigation from and after the first day of May, A. D. 1881, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said Thomas Dunn have and enjoy the free and uninterrupted use of one hundred and sixty inches of the waters of Goose Creek in said county and territory, for the purpose of irrigation, from and after the first day of May, A. D. 1881, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said John A. Carson, have and enjoy the free and uninterrupted use of one hundred and sixty (160) inches of the water of Goose Creek in said county and territory, for the purpose of irrigation from and after the 17th day of May, A. D. 1881, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said David Johns do have and enjoy the free and uninterrupted use of one hundred and sixty inches of the water of Goose Creek in said county and territory, for the purpose of irrigation from and after the 17th day of May, A. D. 1881, continuously. Subject, however to the prior rights of the parties aforesaid.

That the said owners of the Whitby and Tolman Ditch No. 6 do have and enjoy the free and uninterrupted use of six hundred and forty (640) inches

of the waters of Goose Creek in said county and territory for the purpose of irrigation, from and after the first day of August, A. D. 1881, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said owners of the McBride Ditch No. 8 do have and enjoy the free and uninterrupted use of one hundred and sixty inches of the waters of Goose Creek in said county and territory, for the purpose of irrigation, from and after the 12th day of August, A. D. 1881, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the owners of the "Well" Ditch No. 9 have and enjoy the free and uninterrupted use of one hundred and sixty inches of waters of Goose Creek in said county and territory, for the purpose of irrigation from and after the 15th day of August, A. D. 1881, continuously. Subject however, to the prior rights of the parties aforesaid.

That the said owners of the "Green Horner" Ditch No. 10 have and enjoy the free and uninterrupted use of one hundred and sixty inches of the waters of Goose Creek in said county and territory, for the purpose of irrigation, from and after the first day of October, A. D. 1881, subject to the prior rights of the parties aforesaid.

That the said owners of the "Western Canal" No. 1 have and enjoy the free and uninterrupted use of six hundred inches of the water of Goose Creek in said county and territory, for the purpose of irrigation, from and after the first day of March, A. D.

1882, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said owners of the "Weighall and Keplinger" Ditch No. 5, have and enjoy the free and uninterrupted use of six hundred and forty inches of the waters of Goose Creek in said county and territory for the purpose of irrigation, from and after the 1st day of March, A. D. 1882, continuously. Subject, however, to the prior rights of the parties aforesaid.

That the said owners of the Emerson Canal No. 2 do have and enjoy the free and uninterrupted use of two thousand (2000) inches of the water of Goose Creek in said county and territory for the purpose of irrigation from and after the 1st day of May, A. D. 1882, continuously. However, to the prior rights of the parties aforesaid.

That the said Chas. E. Harris do have and enjoy the free and uninterrupted use of two hundred inches of the water of Goose Creek in said county and territory, for the purpose of irrigation, from and after the first day of April, A. D. 1884, to be used continuously from the first day of January till the 20th day of May of each year. Subject, however, to the prior rights of the parties aforesaid.

That the said J. E. Miller do have and enjoy the free and uninterrupted use of six hundred and twenty (620) inches of the water of Goose Creek in said county and territory, for the purpose of irrigation from and after the first day of April, A. D. 1885, to be continuously used from the first day of January

to the 20th day of May in each year. Subject, however, to the prior rights of the parties aforesaid.

It is further ordered, adjudged and decreed that the amount of water herein decreed to each person, ditch or canal, shall be measured as follows: The owner or owners of each ditch shall construct a box or flume of two inch plank sixteen and one $\frac{1}{2}$ feet long of sufficient width and height to carry the water herein awarded to such person, ditch in a substantial manner and place the same at the head of such ditch or canal upon permanent and substantial supports, the lower ends of said flumes to be three-eighths inch lower than the upper and the water to run through said box without any obstructions in any part thereof, the water in said box not to be at any time at a greater depth than nine (9) inches. And that no person, ditches or canals shall receive any of said water except through such flumes.

It is hereby further ordered, adjudged and decreed that plaintiffs herein shall pay one hundred and fifty dollars of the costs of this action. And the defendants herein shall pay two hundred and eleven and 25-100 dollars of said costs, and execution shall be issued therefor.

Done by the court this 10th day of September, 1886.

(Signed) J. B. HAYS,
Judge of the Third District Court of Idaho
Territory.

Filed September 14, 1886 and duly recorded. S.
H. Hays, Clerk, by J. E. Harroun, Deputy.

State of Idaho,
County of Cassia.—ss.

I, George A. Smith, Clerk of the District Court of the Fourth Judicial District of the State of Idaho, in and for Cassia County, do hereby certify that the foregoing sheets of typewritten matter is a full, correct and true copy of the decree in an action entitled Martin Oklebery, H. M. Thatcher, et al., vs. C. H. Karlson, et al., the original of which is now on file in my office.

In Witness Whereof, I have hereunto set my hand and affixed the seal of said Court, at Albion, Idaho, this 24th day of June, 1911.

GEO. A. SMITH,
(Seal.) Clerk of District Court.

*In the District Court of the Fourth Judicial District
of the State of Idaho, in and for Cassia County.*

Mary H. Botzet, *Plaintiff*,

vs.

George Chapin, et al., *Defendants*.

This cause having been heretofore tried by the court without a jury, and the court having made its findings of fact and conclusions of law.

It is now ordered, adjudged and decreed that the following parties are entitled to divert from Goose Creek the amount of water herein indicated, and the right of each party dates from the time hereinafter stated and opposite each name, to-wit:

Mary H. Gillespie, eighty (80) inches, May 31,
1878.

John R. Shaw, one hundred fifty (150) inches,
April 1st, 1888.

James Divine, twenty (20) inches, March 31,
1883.

Charles Walker, forty inches, August 31, 1883.

D. H. Cox, one hundred (100) inches, May 1,
1882.

J. W. Walker, forty inches (40), March 31,
1881.

S. R. Worthington, eighty (80) inches, March
1, 1877.

S. R. Worthington, seventy (70) inches, March
1, 1877.

S. R. Worthington, fifty (50) inches, March 1,
1882.

This said right shall only be used from the 1st day
of April to the 1st day of July in each year.

F. M. Cummins, seventy-five (75) inches, March
1, 1877.

H. H. Severe, one hundred fifteen (115) inches,
March 1, 1877.

E. A. Jordan, one hundred seventy (170) inches,
June 31, 1878.

This said right shall only be used from the 1st day
of April to the 1st day of July of each year.

Henry Adamson, one hundred (100) inches,
March 31, 1877.

J. E. Miller, one hundred and fifty (150) inches,
April 30, 1880.

This said right shall only be used from the 1st day
of April to the 1st day of July in each year.

Isabella Miller, one hundred fifty (150) inches,
April 1, 1880.

This said right shall only be used from the 1st day
of April to the 1st day of July in each year.

George Whittle, eighty (80) inches, March 31,
1887.

It is further ordered, adjudged and decreed that
the following parties are entitled to divert from Trap-
per Creek (a tributary of Goose Creek) the amount
of water herein indicated and the right of each party
dates from the time hereinafter stated and set oppo-
site each name, to-wit:

John R. Shaw, eighty (80) inches, May 31, 1877.

John R. Shaw, forty (40) inches, May 31, 1883.

These rights of John R. Shaw from the said Trap-
per Creek, to-wit, said 80 inches and said 40 inches,
shall be used only from the 1st day of April to the
1st day of July in each year.

John R. Shaw, twenty (20) inches, May 31,
1877.

David Walker, seventy (70) inches, April 30,
1878.

It is further ordered, adjudged and decreed that
the following parties are entitled to divert from Pole
Creek (a tributary of said Goose Creek) the amount
of water herein indicated, and the right of each par-
ty dates from the time hereinafter stated and set
opposite each name, to-wit:

John R. Shaw, one hundred (100) inches, April
1, 1887.

This said right of said Shaw from said Pole Creek

shall be used only from the 1st day of April to the 1st day of July in each year.

It is further ordered, adjudged and decreed that following parties are entitled to divert from Goose Creek the amount of water herein indicated, and the right of each party dates from the time hereinafter stated and set opposite each name, to-wit:

H. D. Haight, one hundred sixty (160) inches,
April 1, 1875.

George Chapin, three hundred twenty (320)
inches, April 1, 1876.

J. F. Tatro, one hundred seventy (170) inches,
July 1, 1877.

W. C. Martindale, eighty (80) inches, May 1st,
1879.

George Craner, forty (40) inches, May 1, 1879.

R. H. Hunter, forty (40) inches, May 1, 1879.

Thomas McBride, 160 inches, May 1, 1879.

H. D. Haight, one hundred sixty inches, Febru-
ary 1, 1880.

Herbert Adams, one hundred sixty inches, Feb-
ruary 1, 1880.

Martin Okleberry, one hundred sixty inches,
March 1, 1880.

H. D. Haight, one hundred sixty inches, March
23, 1880.

Andrew Elison, one hundred forty (140) inches,
April 27, 1880.

George Whittle, eighty (80) inches, April 27,
1880.

C. H. Karlson, twenty (20) inches, April 27,
1880.

The owners of the following canals and ditches, to-wit:

Western Canal No. 1, four hundred (400) inches, March 1, 1881.

Ferguson & McBride Ditch, three hundred twenty (320), April 1, 1881.

Tolman Ditch No. 7, two hundred inches (200), May 1, 1881.

Thomas Dunn, one hundred sixty inches (160), May 1, 1881.

John A. Carson, one hundred sixty (160) inches, May 17, 1881.

David Johns, one hundred sixty (160) inches, May 17, 1881.

John Copper, forty-five (45) inches, May 17, 1881.

John A. Carson, Jr., twenty (20) inches, May 31st, 1881.

Tolman and Whitby Ditch No. 6, 640 inches, August 1st, 1881.

McBride Ditch, one hundred sixty inches, August 12, 1881.

Wells Ditch No. 9, one hundred sixty inches, August 15, 1881.

Green and Homer Ditch, one hundred sixty inches, October 1, 1881.

Western Canal No. 1, six hundred inches, March 1, 1882.

Weighall & Keplinger Ditch No. 5, six hundred forty inches, March 1, 1882.

J. E. Miller as successor of Chas. E. Harris, two hundred inches, April 1st, 1884.

J. E. Miller, six hundred twenty inches, to be used only between the 1st day of January and the 20th day of May in each year.

J. E. Miller, as successor of C. E. Harris, one hundred sixty inches, November 1st, 1880.

Emerson Canal, two thousand (2000) inches, May 1st, 1882.

It is ordered, adjudged and decreed that the several quantities of water herein decreed shall be the quantities hereinbefore named, measured at the point of diversion under a four-inch pressure, and that the first appropriator in point of time is first in right and all appropriators of equal right, subject however to the limitations hereinbefore named.

It is further ordered, adjudged and decreed that in case of insufficiency of water to supply all parties, the entire volume is to be devoted to, and used by those appropriators who are first in point of time.

It is further ordered, adjudged and decreed that the amounts of water herein decreed to the several parties aforesaid shall be measured as follows: The owner or owners of each ditch shall construct a box or flume of two inch plank, sixteen and one-half feet long and of sufficient width and height to carry the amount of water herein awarded to such parties, in a substantial manner and place the same at the head of such ditch, upon permanent and substantial supports, the lower end of said flume to be three eighths of an inch lower than the upper end, the water to

run through said box not to be at any time at a greater depth than nine inches at the head gate in said box or flume, and that no person or persons shall receive or divert any of the waters of said Goose Creek except through said flumes or box, the amount in inches under a four inch pressure to which each party is entitled to be indicated by the number of square inches in the cross section of the water measured $8\frac{1}{4}$ feet below the gate in said flume.

It is further ordered, adjudged and decreed that any and all parties to this action and their successors and assigns and each of them are hereby perpetually enjoined from diverting or interfering with any of the waters of said Goose Creek except in the quantity and in the order and in the manner in which they and each of them are herein decreed to be entitled thereto.

It is further ordered, adjudged and decreed that the following costs and expenses, to-wit, cost of service of summons and sheriff's costs and the costs and fees of the clerk, the actual and necessary cost for all plats from the land office, shall be equally divided between the plaintiffs and defendants to whom water is decreed hereinbefore in this action, and execution may issue for said costs at the expiration of thirty days from date hereof, and all costs, including witness fees, shall be borne and paid by the party incurring or making the same.

C. O. STOCKSLAGER, District Judge.

March 19, 1892.

M. T. Brown, Clerk of Court.

Entered herein April 9, 1892.

State of Idaho,
County of Cassia,—ss.

I, George A. Smith, Clerk of the District Court of the Fourth Judicial District of Idaho, in and for Cassia County, do hereby certify that the foregoing sheets of typewritten matter is a full, true and correct copy of the decree in an action entitled Mary H. Botzet, plaintiff, vs. George Chapin, et al., defendants, the original of which is now on file in my office.

In Witness Whereof, I have hereunto set my hand and affixed the seal of this court, this 24th day of June, 1911.

(Seal.) GEO. A. SMITH,
Clerk of District Court.

PLAINTIFFS' EXHIBIT No. 11.

To the Clerk of the Court:

Plaintiffs' Exhibit No. 11 is in such form that a typewritten copy of it cannot be made, and it is suggested that the original exhibit be sent to the printer, who can, undoubtedly, make a printed copy of it.

DEFENDANTS' EXHIBIT No. 2.

Rancho Grande.

Lands irrigated in 1889 in three fields at main ranch, and the Wine Cup field, at junction with Little Goose Creek and Big Goose Creek.

<i>Upper Field—</i>		ACRES	ACRES
On east side of Big Goose Creek	87.1		
Under new ditch laid out at that time	10.2	97.3	
On west side of Big Goose	134.4	231.7	
		<hr/>	
		231.7	
<i>Middle and Lower Fields—</i>			
Under east slough	46.8		
Under Jake Ritson ditch	3.9		
Under main ditch	90.5	141.2	
West side		65.5	
Total in house (or middle) and lower fields		<hr/>	206.7
Total in upper field			231.7
		<hr/>	
Total at Rancho Grande			438.4
<i>Wine Cup Field—</i>			
On east side	166.3		
On west side	102.9		
		<hr/>	
Total	269.2		
Rancho Grande	438.4		
		<hr/>	
Total irrigated land	707.6		

The foregoing is all of the evidence introduced, except certain original exhibits that cannot be conveniently made a part of the printed transcript, and are to be transmitted separate from the transcript to the Appellate Court.

(Title of Court and Cause.)

IN EQUITY— No. 510.

Stipulation.

It is hereby stipulated and agreed by and between the plaintiffs and the defendants herein, by and through their respective solicitors, that the foregoing is a true and correct statement of the evidence introduced in said cause reduced to narrative form and that the same may be settled and allowed by the court or the judge thereof on this date.

Dated November 6th, 1916.

S. H. HAYS,
P. B. CARTER,

Solicitors for Plaintiffs.

ANDREW HOWAT,
HERBERT R. MACMILLAN,
FRANK K. NEBEKER,
EDWIN SNOW,

Solicitors for Defendants.

It appearing that the within and foregoing statement of evidence was lodged in due time with the Clerk of this Court and that notice of such lodgment and of the time of the proposed settlement thereof was given to the solicitors for plaintiffs, and it appearing that the said statement as amended is true, complete and properly prepared, and is so stipulated to be by the parties hereto, it being, moreover, stipulated that the same may be settled and allowed on this date;

It Is Therefore Ordered, that the same is hereby settled and allowed as a true, complete and correct

statement of the evidence reduced to narrative form and of the exhibits introduced in said cause.

Dated this 6th day of November, 1916.

FRANK S. DIETRICH,

District Judge.

Lodged Sept. 20, 1916. W. D. McReynolds, Clerk.

Filed Nov. 6, 1916. W. D. McReynolds, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

DECISION.

Dec. 11, 1915.

DIETRICH, District Judge:

In the main the evidence is meager and somewhat unsatisfactory touching the amount of land to which water has been applied by the parties hereto or their predecessors in interest. The water claimed by the plaintiff was appropriated for and used in the raising of general agricultural crops, crops upon lands which generally have been put under cultivation. The water claimed by the defendant has for the most part been applied to lands in their natural condition, and chiefly for the purpose of producing pasturage or native hay; there has been practically no cultivation in the ordinary agricultural sense. Upon consideration I have reached conclusions as follows touching the amount of land upon which the parties are entitled to use water:

First—The Plaintiffs' Rights.

For 300 acres, dating from May 1, 1878,

For 100 acres, dating from May 1, 1879.

For 250 acres, dating from May 1, 1880.

For 850 acres, dating from May 1, 1882.

For 500 acres, dating from May 1, 1883.

For 3000 acres, dating from May 1, 1884.

For 1500 acres, dating from May 1, 1888.

These rights, aggregating 6500 acres, constitute what are referred to in the record as the older rights, which the plaintiff company purchased from the settlers when it entered upon the construction of its project.

The plaintiff also hold two water permits, one for 500 second feet, dating from March 27, 1908, and one for 600 second feet, from March 10, 1909. These permits, of course, are very greatly in excess of the amount of water flowing in the stream, and presumably they were sought and granted for the purpose of enabling plaintiff to divert and impound in its storage reservoir all of the surplus flood waters of the stream at all times of the year. There can be no question that the plaintiff's diverting and impounding works are more than sufficient to divert and conserve all of the water flowing in the stream, and that it has need for more water than the stream supplies properly to irrigate the lands of its stockholders must also be conceded. Inasmuch, therefore, as these permits, which it is found have ripened into vested rights, absorbed all the waters of the stream not theretofore appropriated, it is of interest to inquire only touching those claims of defendant which were initiated prior to the dates of the permits.

The Defendant's Rights.

I find that no water was ever used by the defendant or its predecessors in interest upon what is called the Winecup ranch, except for the purpose of producing forage or pasturage or wild meadow lands, and that the water was used and the defendant is entitled to rights for the following acreages from the following dates:

100 acres of pasture or meadow land from May 1, 1875.

125 acres of the same kind of lands from May 1, 1886.

100 acres of the same kind of lands from May 1, 1900.

Rancho Grande.

On the Rancho Grande I find that the defendant is entitled to rights upon the following acreages from the following dates:

250 acres of pasture and meadow land from May 1, 1883.

50 acres of hay land from May 1st, 1883.

50 acres of hay land from May 1st, 1889.

100 acres of pasture from May 1, 1900.

Spring Creek Ranch.

Upon the Spring Creek ranch I find that the defendant is entitled to rights for the following acreages, all dating from May 1, 1904:

10 acres of cultivated or alfalfa land.

35 acres of wild hay land.

75 acres of pasture land.

The Amount or Duty of Water.

At a recent hearing testimony was introduced touching the duty of water. Part of it relates to an experiment made by the witness Beason. The witness testifies that in ten days he used thirteen and a half acre feet on seven and a half acres, or in the neighborhood of one and eight-tenths acre feet per acre for a single irrigation, and then the small tract experimented upon was not fully irrigated. The expert witness Tanner testified that ordinarily one-fourth of this amount is sufficient thoroughly to irrigate a tract of land once. Of course, it is quite possible so to apply water to land, especially if the soil be of an unusually porous character, that almost any quantity can be used in a single irrigation, but the law will not permit parties to irrigate in an unreasonable way and thus waste water. The head should bear some relation to the character of the soil and it is unjustifiable waste to undertake to irrigate with dribbling streams. In this experiment it is thought the method of application was so irrational that the result is wholly without value.

There is testimony to the effect that water must be kept upon the defendant's land all the time in order to produce good crops. It is doubtless true that a tract of land may be so treated that in time the vegetation naturally growing thereon will require water practically all of the time. It may be that by continuously drenching soils during a series of years only those species of wild grasses will survive which need water continuously, or other species will in time con-

fine their roots to the surface of the soil, to avoid drowning. But it does not follow that with a readjustment the lands would not produce quite as good crops with much less water. One of the witnesses, for example, expresses the view that the timothy which has been mixed with the wild grasses here would not flourish unless watered every three or four days; but as a matter of general knowledge we know that timothy often grows luxuriantly where there is no irrigation, and where the only source of moisture is the rain which falls at infrequent and uncertain intervals. Moreover, if credence is to be given to the testimony of the four witnesses who testified for the plaintiff, it is made to appear that sometimes with but a single irrigation, and generally with only two irrigations, crops quite as good as those produced on the defendant's land have for years been produced along the same stream upon lands of a similar character and similarly located. The difficulty is that no effort has ever been made by the defendant to determine the economic use of water for the raising of hay. While it does appear that good crops may be produced by keeping the lands drenched, no experiment has ever been made for the purpose of determining the least amount of water required to produce such crops upon similar lands which have never been so drenched. The testimony of the witness Tanner exhibits much learning, and it is not without weight, but touching the concrete question of the economic use of water in producing wild hay his opinion involves much of speculation. His experience and ob-

ervation in that field have been very meager, and his views are not altogether in harmony with those to be found in certain respectable treatises upon the subject, nor, as has already been shown, are they in accord with the actual experience of the four witnesses who testified for the plaintiff.

Upon consideration of the entire record, I have concluded to allow the plaintiff at the rate of two and three-fourths acre feet per acre, and the defendant at the rate of three acre feet per acre for its hay and grain lands, and two acre feet for its grazing or pasture lands—the several amounts to be of the dates and for the number of acres hereinbefore stated. Counsel for the plaintiff are directed to prepare decree. The decree will prohibit the diversion by the defendant of water from the stream during the period from September 1st of each year to April 1st of the ensuing year. It will also provide that the maximum amount which may be diverted at any one time upon the Winecup ranch is six and a half second feet; upon the Rancho Grande, nine second feet; and upon the Spring Creek ranch two and a half second feet. The right of the plaintiff to receive at the rate of two and three-fourths acre feet for 6500 acres shall be deemed to be available for its use out of the natural flow of the stream during the season from April 1st to September 1st of each year; and up to the maximum amount of two and three-fourths acre feet it may, to supply said right, draw from the stream at the rate of a second foot for each 50 acres at any time during said season, so long as there is water in the

stream applicable to such right according to the dates hereinbefore found and stated. In other words, in utilizing the rights awarded to the defendant, and the rights awarded to the plaintiff on account of the 6500 acres, the parties will be permitted to draw from the stream during the season specified at the rate of a second foot for each fifty acres until they have received the maximum, in acre feet, allowed.

Endorsed: Filed Dec. 13, 1915.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

DECREE.

This cause came on further to be heard at this term of this Court, the same having been heretofore submitted, and the Court's decision having been heretofore filed herein;

Thereupon, upon consideration thereof, it was ORDERED, ADJUDGED AND DECREED:

1. That the extent and relative dignity of the rights of the several parties hereto to use for irrigation purposes the waters of what is known as Goose Creek and its tributaries, which stream flows in a northerly and northeasterly direction from the State of Nevada into the State of Idaho, and the watershed of which is situated in both states, are defined as follows:

Rights of the Plaintiffs, Twin Falls Oakley Land and Water Company, and Oakley Canal Company.

(a) The plaintiffs, the Twin Falls Oakley Land and Water Company, a corporation, and Oakley Ca-

nal Company, a corporation, are entitled to divert and use annually:

825 acre feet of water, under their appropriation made May 1, 1878.

275 acre feet of water, under their appropriation made May 1, 1879.

687.5 acre feet of water, under their appropriation made May 1, 1880.

2337.5 acre feet of water, under their appropriation made May 1, 1882.

1375 acre feet of water, under their appropriation made May 1, 1883.

8250 acre feet of water, under their appropriation made May 1, 1884.

4125 acre feet of water, under their appropriation made May 1, 1888.

Said plaintiffs are further entitled to divert and use at the rate of 500 cubic feet of water per second of time by virtue of their appropriation made March 27th, 1908, under permit No. 3751, issued by the State Engineer of the State of Idaho; and 600 cubic feet of water per second of time by virtue of their appropriation made March 10, 1909, under permit No. 4731; all of said water to be used on lands embraced in what is known as the Oakley Carey Act project, hereinafter more fully described.

Rights of Vineyard Land and Stock Company, a corporation, and Utah Construction Company, a corporation.

(b) The defendants, Vineyard Land and Stock Company, a corporation, and Utah Construction

Company, a corporation, are entitled to divert and use annually :

200 acre feet of water, under their appropriation made May 1, 1875, for use on their Winecup ranch

650 acre feet of water, under their appropriation made May 1, 1883, for use on their Grande ranch.

250 acre feet of water, under their appropriation made May 1, 1886, for use on their Winecup ranch.

150 acre feet of water, under their appropriation made May 1, 1889, for use on their Grande ranch.

400 acre feet of water, under their appropriation made May 1, 1900, one-half on the Winecup ranch and one-half on the Grande ranch.

285 acre feet of water, under their appropriation made May 1, 1904, for use upon their Spring Creek ranch, the lands in said three ranches being hereinafter more fully described.

The relative priority of rank of said several rights of the plaintiffs and of the defendants is and shall be recognized as being in the order of the dates of the several appropriations, and no one holding a subsequent appropriation shall be entitled to receive any water until all prior appropriations have been fully satisfied.

2. It is further adjudged and decreed that the said defendants may, within the maximum amount

of their annual right, as the same is hereinbefore defined, divert the water to which they are entitled from said Goose Creek and its tributaries at the rate of not in excess of six and one-half cubic feet per second of time for the Winecup ranch, nine cubic feet per second of time for the Grande ranch, and two and one-half cubic feet per second of time for the Spring Creek ranch.

In utilizing such rights of the plaintiffs as are hereinbefore defined in terms of acre feet, they may divert from the channel of the stream, that is, they shall have the right to receive into their reservoir from the natural flow of the stream not to exceed at the rate of a second foot for each 137.5 acre feet of the appropriation or right, the aggregate amount so diverted not to exceed the total number of acre feet constituting such right. This provision shall not be construed as limiting the amount which the plaintiffs may at any one time divert from their reservoir and use.

The right to divert water at the outlet of the Oakley reservoir shall be limited under all of the rights decreed to the plaintiffs herein to the amount of one hundred forty-five thousand two hundred (145,200) acre feet annually.

3. Each of the parties hereto, together with its agents, servants and employes, and those claiming by, through or under it, is perpetually enjoined from using any of the waters of said stream or its tributaries in excess of its several rights as the same are hereinbefore defined, and from using the water at

such time or in such manner or in such amount as will infringe upon any right of another party, as such right is hereinbefore defined.

4. It is further ordered and decreed that all water diverted from said Goose Creek and its tributaries be measured at the point of diversion from the natural channel, and that no water shall be diverted except through conduits so constructed that water can be accurately measured. The plaintiffs are required to install a suitable and sufficient measuring device at a convenient point immediately above the Oakley reservoir, and also at the point of diversion at the outlet of what is known as the Oakley reservoir in Section 25, Township 14 South, Range 22 East, Boise Meridian, Cassia County, State of Idaho, and the defendants are required to install uniform measuring devices at their several points of diversion along the stream and its tributaries, all of such devices to be of such design as to automatically register the amounts of water diverted. All of such measuring devices and gauges shall at all times be subject to the reasonable inspection of either party, and each party shall have access to the premises where the same are situated for such purpose.

5. The lands for which the plaintiffs have the right to use water are embraced within the Oakley Project, in Cassia County, Idaho, and are described as follows:

Commencing at the diversion point in the East Side Canal of said Oakley Project in Section eighteen (18), township fourteen (14) south, range twenty-

two (22) east, Boise meridian; thence along said canal in a northeasterly direction to the point of intersection with the Main East Side Canal in section twenty-seven (27), township thirteen (13) south, range twenty-two (22) east; thence continuing in a northeasterly direction to the point of crossing with the middle line of section one (1), township thirteen (13) south, range twenty-two (22) east; thence north along said middle line of said section to the middle of the south line of section thirty-six (36), township eleven (11) south, range twenty-two (22) east; thence west to the northwest corner of section six (6), township twelve (12) south, range twenty-one (21) east; thence south to the intersection with the West Side Canal of said Oakley Project; thence southeasterly along said canal to the head of said canal in section seventeen (17), township fourteen (14) south, range twenty-two (22) east, Boise meridian.

The defendants' Winecup ranch upon which the water applying thereto may be used consists of three hundred and twenty-five acres, being the whole or part of the following legal subdivisions situate in Elko county, Nevada, to-wit:

Section twelve (12), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—South half ($S\frac{1}{2}$) of southeast quarter ($SE\frac{1}{4}$) of southwest quarter ($SW\frac{1}{4}$).

Section thirteen (13), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—East half ($E\frac{1}{2}$) of northwest quarter ($NW\frac{1}{4}$), east half

(E $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$) of southwest quarter (SW $\frac{1}{4}$), east half (E $\frac{1}{2}$) of southeast quarter (SE $\frac{1}{4}$) of southwest quarter (SW $\frac{1}{4}$), west half (W $\frac{1}{2}$) of southeast quarter (SE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$) of southeast quarter (SE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of southeast quarter (SE $\frac{1}{4}$) of southeast quarter (SE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of west half (W $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$).

Section twenty-four (24), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—east half (E $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$).

The defendants' Grande ranch upon which the water applying thereto may be used consists of four hundred fifty (450) acres, being the whole or part of the following legal subdivisions situate in Elko County, Nevada, to-wit:

Section twenty-six (26), township forty-seven (47) north, range sixty-eight (68) east, Mt. D. M.—east half (E $\frac{1}{2}$) of southeast quarter (SE $\frac{1}{4}$) of southwest quarter (SW $\frac{1}{4}$), south half (S $\frac{1}{2}$) of southwest quarter (SW $\frac{1}{4}$) of southeast quarter (SE $\frac{1}{4}$).

Section thirty-five (35), township forty-seven (47) north, range sixty-eight (68) east, Mt. D. M.—west half (W $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$) of northeast quarter (NE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of southeast quarter (SE $\frac{1}{4}$) of northeast quarter (NE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of southeast quarter (SE $\frac{1}{4}$), west half (W $\frac{1}{2}$) of northeast quarter (NE $\frac{1}{4}$) of southeast

quarter ($SE\frac{1}{4}$), west half ($W\frac{1}{2}$) of southeast quarter ($SE\frac{1}{4}$) of southeast quarter ($SE\frac{1}{4}$), east half ($E\frac{1}{2}$) of northeast quarter ($NE\frac{1}{4}$) of northwest quarter ($NW\frac{1}{4}$).

Section two (2), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—northwest quarter ($NW\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), west half ($W\frac{1}{2}$) of northeast quarter ($NE\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), west half ($W\frac{1}{2}$) of southeast quarter ($SE\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), southwest quarter ($SW\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), east half ($E\frac{1}{2}$) of northwest quarter ($NW\frac{1}{4}$) of southeast quarter ($SE\frac{1}{4}$), east half ($E\frac{1}{2}$) of southwest quarter ($SW\frac{1}{4}$) of southeast quarter ($SE\frac{1}{4}$), east half ($E\frac{1}{2}$) of southeast quarter ($SE\frac{1}{4}$).

Section eleven (11), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—northeast quarter ($NE\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), east half ($E\frac{1}{2}$) of the northwest quarter ($NW\frac{1}{4}$) of the northeast quarter ($NE\frac{1}{4}$).

Section twelve (12), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—west half ($W\frac{1}{2}$) of northwest quarter ($NW\frac{1}{4}$) of northwest quarter ($NW\frac{1}{4}$), and northwest quarter ($NW\frac{1}{4}$) of southwest quarter ($SW\frac{1}{4}$) of northwest quarter ($NW\frac{1}{4}$).

Section one (1), township forty-six (46) north, range sixty-eight (68) east, Mt. D. M.—west half ($W\frac{1}{2}$) of southwest quarter ($SW\frac{1}{4}$) of southwest quarter ($SW\frac{1}{4}$), west half ($W\frac{1}{2}$) of northwest quarter ($NW\frac{1}{4}$) of southwest quarter ($SW\frac{1}{4}$).

The defendants' Spring Creek ranch consists of one hundred twenty (120) acres comprising the whole or a part of the following legal subdivisions situate in Elko County, Nevada, to-wit:

Section twenty-three (23), township forty-six (46) north, range sixty-nine (69) east, Mt. D. M.—west half ($W\frac{1}{2}$) of southwest quarter ($SW\frac{1}{4}$), west half ($W\frac{1}{2}$) of west half ($W\frac{1}{2}$) of southeast quarter ($SE\frac{1}{4}$) of southwest quarter ($SW\frac{1}{4}$), west half ($W\frac{1}{2}$) of west half ($W\frac{1}{2}$) of northeast quarter ($NE\frac{1}{4}$) of southwest quarter ($SW\frac{1}{4}$), west half ($W\frac{1}{2}$) of southwest quarter ($SW\frac{1}{4}$) of northwest quarter ($NW\frac{1}{4}$), south half ($S\frac{1}{2}$) of northwest quarter ($NW\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), north half ($N\frac{1}{2}$) of southwest quarter ($SW\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), southwest quarter ($SW\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), northwest quarter ($NW\frac{1}{4}$) of southeast quarter ($SE\frac{1}{4}$) of northeast quarter ($NE\frac{1}{4}$), and northeast quarter ($NE\frac{1}{4}$) of northwest quarter ($NW\frac{1}{4}$).

6. It is further adjudged and decreed that the Court retain jurisdiction to make all reasonable rules touching the manner of diverting, measuring and distributing the water, and the devices to be installed and used for such purposes, and to direct that the parties keep accurate and detailed records of the amounts of water diverted and to require reports to be filed from time to time of the amounts so diverted, and generally to make such orders as may be found reasonably necessary to give effect to the decree, and

to appoint commissioners or watermasters to make distribution in accordance with its terms, and to punish the parties hereto, their officers, agents and employes, and their successors in interest, for any violations of the provisions thereof.

Dated this 30th day of March, 1916.

FRANK S. DIETRICH,

District Judge.

Endorsed: Filed March 30, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

PETITION FOR APPEAL.

To the Honorable Frank S. Dietrich, District Judge:

The above named defendants, Vineyard Land and Stock Company and Utah Construction Company, feeling aggrieved by the decree rendered and entered in the above entitled cause on the 30th day of March, 1916, do hereby appeal from said decree to the Circuit Court of Appeals for the Ninth Judicial Circuit, for the reasons set forth in the Assignment of Errors filed herewith, and they pray that their appeal be allowed and that citations be issued as provided by law, and that a transcript of the record proceedings and documents upon which said decree was based, duly authenticated, be sent to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, under the rules of such Court in such cases made and provided.

And your petitioners further pray that the proper

order relating to the required security to be required of them be made.

Dated this 20th day of Sept., 1916.

ANDREW HOWAT,
J. A. MARSHALL,
HERBERT R. MACMILLAN,
FRANK K. NEBEKER,
EDWIN SNOW,
C. A. BOYD,
C. B. HENDERSON,

Solicitors for Defendants.

Appeal allowed upon giving bond as required by law for the sum of three hundred dollars (\$300.00).

Dated Sept. 20, 1916.

FRANK S. DIETRICH,
United States District Judge
for the District of Idaho.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

ASSIGNMENT OF ERRORS.

Now come the defendants in the above entitled cause, and file the following assignment of errors, upon which they will rely upon the prosecution of the appeal herein from the decree made by this Honorable Court on the 30th day of March, A. D. 1916:

I.

The Court erred in decreeing to plaintiffs any of the waters of said Goose Creek and its tributaries, with the exception of such said waters, to-wit, about

30,000 acre feet thereof, as plaintiffs are entitled to under permits issued by the State Engineer of the State of Idaho, being respectively, permit number 3751, dated March 27, 1908, and permit number 4731, dated March 10, 1909.

II.

Even if the Court did not err in decreeing to plaintiffs water rights in said streams other than those to which plaintiffs are entitled under said permits No. 3751 and No. 4731, respectively, the Court erred nevertheless in decreeing to plaintiffs water from said streams, other than as follows:

450 acre feet dating from May 1st, 1878;
150 acre feet dating from May 1st, 1879;
300 acre feet dating from May 1st, 1881;
1350 acre feet dating from May 1st, 1883;
6755 acre feet dating from May 1st, 1888; and
21025 acre feet under said permits No. 3751 and No. 4731.

III.

The Court erred in making and entering said decree, in awarding and decreeing to plaintiffs the right to the use of any of the waters of said Goose Creek and its tributaries as a prior right to the rights of the defendant Vineyard Land and Stock Company in and to said waters.

IV.

The Court erred in making and entering said decree, in not holding that the defendant Vineyard Land and Stock Company had the following rights to the use of the waters of said streams:

400.0 acre feet, dating from the year 1875;
1018.4 acre feet, dating from May 1st, 1883;
962.0 acre feet, dating from May 1st, 1886;
15.6 acre feet, dating from May 1st, 1888;
393.6 acre feet, dating from May 1st, 1889; and
1418.4 acre feet, dating from various dates between the year 1890 and January 1st, 1906.

V.

The Court erred in making and entering said decree in enjoining the defendant Vineyard Land and Stock Company from using the waters of said streams to which it is entitled upon the lands of said defendant susceptible of irrigation from the waters of said streams other than the lands specifically mentioned and described in said decree.

VI.

The Court erred in limiting and restricting the defendant Vineyard Land and Stock Company with reference to the sizes of irrigation streams to be used by it in the irrigation of its lands in the State of Nevada from the waters of said Goose Creek and its tributaries.

VII.

The Court erred in decreeing absolutely to the plaintiffs any of the waters of Goose Creek and its tributaries in excess of the quantity, to-wit, about 30,000 acre feet, which has been used by plaintiffs for beneficial purposes, and in enjoining the defendant Vineyard Land and Stock Company from using any of such excess waters prior to the actual application of the same by plaintiffs to the beneficial uses

for which said waters are claimed; and in making and entering any decree herein with respect to such excess waters, except to determine the amount thereof that can be diverted through plaintiffs' works, and the priority of the same, and to set a time within which such amount of such excess shall, subject to the rights of the defendant, be applied by plaintiffs to the purposes for which the same is claimed.

VIII.

The Court erred in making and entering its decree herein enjoining the defendant Vineyard Land and Stock Company from changing the points of diversion and places of use of the waters of said Goose Creek and its tributaries, in the State of Nevada, as authorized by the laws of said state.

IX.

The Court erred in making and entering its decree herein enjoining the defendant Vineyard Land and Stock Company from irrigating its lands in the State of Nevada by means of dams placed in the natural channels of said Goose Creek and its tributaries, and in sloughs and other channels leading therefrom, thereby flooding said lands without the use of artificial canals, ditches and conduits, and in enjoining the defendant Vineyard Land and Stock Company from diverting any of the waters of said stream or its tributaries, except by means of ditches or other devices provided with automatic gauges.

X.

The Court erred in making and entering its decree herein requiring the defendant Vineyard Land and

Stock Company to install in all of its ditches, canals and conduits, in the State of Nevada, automatic measuring devices for measuring all waters used by the said defendant from said streams, in said state, and in decreeing that all such measuring devices and gauges shall at all times be subject to the inspection of plaintiffs; and in decreeing that plaintiffs should have the right to go upon the lands of said defendant in the State of Nevada for the purpose of inspecting the measuring devices installed by defendant in its said ditches, canals and other conduits.

XI.

The Court erred in making and entering its decree herein in retaining jurisdiction for the purpose of making rules touching the manner of diverting, measuring and distributing said waters, or for the purpose of making rules concerning the devices to be installed and used for diverting, measuring and distributing said waters, or for the purpose of directing the defendants to keep records of the amounts of water diverted by said Vineyard Land and Stock Company, or for the purpose of requiring defendants, or either of them, to make or file reports concerning the amounts of water diverted, or for the purpose of appointing commissioners of watermasters to make distribution of said waters, or for the purpose of making any order whatever touching the distribution, points of diversion, places of use, or methods of irrigation, in the use of said waters by the defendant Vineyard Land and Stock Company in connection with the irrigation of its lands in the State of Nevada.

XII.

In addition to the foregoing, The Utah Construction Company assigns as error, that the Court erred in making and entering the decree herein as to it, and in not dismissing the bill of complaint as to said defendant.

WHEREFORE, the appellants, and each of them, pray that said decree be reversed and that such decree be entered as is meet and equitable.

ANDREW HOWAT,

J. A. MARSHALL,

HERBERT R. MACMILLAN,

FRANK K. NEBEKER,

Residence: Salt Lake City, Utah;

C. B. HENDERSON,

Residence: Elko, Nevada;

EDWIN SNOW,

Residence: Boise City, Idaho;

C. A. BOYD,

Residence: Ogden City, Utah;

Solicitors for Defendants.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

STIPULATION.

IT IS STIPULATED that all of plaintiffs' exhibits, except those numbered 1 to 5-C, inclusive, 9 and 10, may be omitted from the printed transcript of the record on appeal, and that the originals of all other exhibits introduced by plaintiffs, as well as defendant's exhibits numbered 1, 2, 3, 4 and 5, may

be by the clerk of the above entitled Court transmitted separately from the printed transcript to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, and that said exhibits so transmitted separately from the printed transcript may be considered by said Circuit Court of Appeals the same in all respects as if said exhibits were incorporated in said printed transcript.

It is further stipulated that if said Circuit Court of Appeals shall of its own motion determine that any part of the record not included in the printed transcript should have been so included for the information or convenience of the Court, or if either party shall hereafter desire any additional part of the record certified to said Court, or printed as a part of the record, the same may be certified up to said Circuit Court of Appeals, and, if required, printed as a supplement to the record at the expense, in the first instance, of the appellants.

Dated this 20th day of Sept., 1916.

S. H. HAYS,

P. B. CARTER,

Solicitors for Plaintiffs.

ANDREW HOWAT,

J. A. MARSHALL,

HERBERT R. MACMILLAN,

FRANK K. NEBEKER,

EDWIN SNOW,

C. B. HENDERSON,

C. A. BOYD,

Solicitors for Defendant.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

ORDER FOR TRANSMISSION OF ORIGINAL
EXHIBITS.

It appearing to me to be necessary and proper that the original papers hereinafter mentioned should be inspected in the United States Circuit Court of Appeals for the Ninth Judicial Circuit, upon appeal herein:

It is hereby ordered that plaintiffs' original exhibits numbered six and seven, and eleven to twenty-four, inclusive, and defendants' original exhibits numbered one, three, four and five, shall be certified by the clerk of this Court and transmitted to the clerk of the United States Circuit Court of Appeals for the Ninth Judicial Circuit, separately from the printed transcript herein, at the time that said printed transcript is transmitted.

Dated this 20th day of September, A. D. 1916.

FRANK S. DIETRICH,
United States District Judge
for the District of Idaho.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

By Pearl E. Zanger, Deputy.

(Title of Court and Cause.)

PRECIPE.

The Clerk of the above entitled Court is hereby directed to transcribe for the record on appeal herein by defendants, Vineyard Land and Stock Company, and the Utah Construction Company, the following pleadings, exhibits and documents:

Bill of complaint, including statement of the substance of Exhibit "A" and a copy of Exhibit "B" attached to said bill of complaint, answer and proposed amendment to the answer, statement of evidence of all witnesses, including a copy of plaintiffs' exhibits numbered 1, 5-C, 8, 9 and 10, and a statement of the substance of plaintiffs' exhibits numbered 2, 3, 4, 5-A and 5-B; copy of defendant's exhibit numbered 2; the decision of the trial court, the decree made and entered in said cause, the petition for appeal and the order allowing the same, the assignment of errors, the citation, the stipulation between counsel for the respective parties as to the transmission of original exhibits, the precipe to the clerk of said Court, the order of the trial Court for the transmission of original exhibits, the bond on appeal, the clerk's return to record and clerk's certificate.

Said clerk is directed in preparing the printed transcript on appeal herein to exclude the formal and immaterial parts of all of said pleadings, exhibits and documents.

Said clerk is also requested to attach his certificate to each original exhibit transmitted to the appellate Court.

Dated this 20th day of September, 1916.

ANDREW HOWAT,
J. A. MARSHALL,
HERBERT R. MACMILLAN,
FRANK K. NEBEKER,

Residence: Salt Lake City, Utah;

C. B. HENDERSON,

Residence: Elko, Nevada;

EDWIN SNOW,

Residence: Boise City, Idaho;

C. A. BOYD,

Residence: Ogden, Utah;

Solicitors for Defendants.

Due service of the foregoing is hereby admitted,
this 20th day of Sept., 1916.

S. H. HAYS,

P. B. CARTER,

Solicitors for Plaintiffs.

Endorsed: Filed Sept. 20, 1916.

W. D. McReynolds, Clerk.

(Title of Court and Cause.)

BOND ON APPEAL.

Know All Men By These Presents: That we, Vineyard Land and Stock Company, a corporation of Utah, and Utah Construction Company, a corporation of Utah, as principals, and American Surety Company of New York, a corporation of the State of New York, as surety, are held and firmly bound unto Twin Falls Oakley Land and Water Company, a corporation, and Oakley Canal Company, a corporation, in the sum of Three Hundred and no-100 Dollars (\$300.00), to be paid to them and to their respective successors and assigns;

To which payment well and truly to be made we bind ourselves, and each of us, jointly and severally, and each of our successors and assigns, by these presents.

Sealed with our seals and dated this 18th day of September, A. D. 1916.

WHEREAS, the above named Vineyard Land and Stock Company and Utah Construction Company are about to prosecute an appeal to the United States Circuit Court of Appeals for the Ninth Judicial Circuit, to reverse the judgment of the United States District Court for the District of Idaho, Southern Division, in the above entitled cause;

NOW, THEREFORE, the condition of this obligation is such that if the above named Vineyard Land and Stock Company and Utah Construction Company shall prosecute their said appeal to effect and answer all costs if they fail to make good their plea, then this obligation shall be void; otherwise to remain in full force and effect.

VINEYARD LAND AND STOCK COMPANY,

By Frank K. Nebeker,

Attest:

Its Attorney.

W. H. Wattis, Secretary.

UTAH CONSTRUCTION COMPANY,

By Frank K. Nebeker,

Attest:

Its Attorney.

W. H. Wattis, Secretary.

AMERICAN SURETY COMPANY OF NEW
YORK,

By W. E. McKell,

Attest:

Resident Vice President.

V. H. Galloway,

Resident Assistant Secretary.

(Countersigned) Sheppard & Falk,

(Corporate Seal)

By Bradley Sheppard,

Agent, Boise, Idaho.

STATUTORY AFFIDAVIT FOR CORPORATE
SURETY—IDAHO.

State of Utah,

County of Salt Lake,—ss.

On the 18th day of September, 1916, personally appeared before me, a Notary Public in and for the County and State aforesaid, W. E. McKell, to me known to be a Resident Vice President of the AMERICAN SURETY COMPANY OF NEW YORK, who, being by me duly sworn, did depose and say: That he resided in the City of Salt Lake City, State of Utah; that he is Resident Vice President of the AMERICAN SURETY COMPANY OF NEW YORK, the corporation described in and which executed the above instrument; that he knew the corporate seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by order of the Board of Trustees of said corporation; and that he signed his name thereto by like order; that said corporation has complied with Chapter Eleven of the Idaho Revised Codes and all other laws of the State of Idaho relating to surety companies and has also complied with the Act of Congress approved August Thirteenth, A. D. 1894, entitled: "An Act relative to recognizances, stipulations, bonds and undertakings, and to allow certain corporations to be accepted as surety thereon," as amended March 23, 1910; and that the liabilities of said corporation do not exceed its assets as ascertained in the manner provided by law. And the said W. E. McKell further said that he was acquainted with V. H. Galloway and knew him to be one of the

Resident Assistant Secretaries of said corporation; that the signature of said V. H. Galloway subscribed to the said instrument is in the genuine handwriting of the said V. H. Galloway and was thereto subscribed by the like order of the said Board of Trustees, and in the presence of him, the said W. E. McKell, Resident Vice President. Affiant further says that the Insurance Commissioner of the State of Idaho, whose address is Boise, Idaho, has been appointed Attorney upon whom process for the State of Idaho may be served according to law.

W. E. McKELL.

Subscribed and sworn to before me this 18th day of September, 1916.

CORA BEATTY,

(Seal)

Notary Public.

Approved: Dietrich, Judge. Sept. 20, '16.

Filed Sept. 20, 1916. W. D. McReynolds, Clerk.

*In the District Court of the United States, for the
District of Idaho, Southern Division.*

TWIN FALLS OAKLEY LAND AND WATER
COMPANY, a corporation, and OAKLEY CA-
NAL COMPANY, a corporation, Plaintiffs,
vs.

VINEYARD LAND AND STOCK COMPANY, a
corporation, and UTAH CONSTRUCTION COM-
PANY, a corporation, Defendants.

CITATION ON APPEAL.

In Equity No. 510.

*The United States of America, to Twin Falls Oakley
Land and Water Company, a corporation, and
Oakley Canal Company, a corporation—
Greeting:*

YOU ARE HEREBY NOTIFIED that in a certain case in equity in the United States District Court for the District of Idaho, Southern Division, wherein Twin Falls Oakley Land and Water Company, a corporation, and Oakley Canal Company, a corporation, are plaintiffs, and Vineyard Land and Stock Company, a corporation, and Utah Construction Company, a corporation, are defendants, an appeal has been allowed the defendants therein to the United States Circuit Court of Appeals for the Ninth Judicial Circuit. You are hereby cited and admonished to be and appear in said United States Circuit Court of Appeals for the Ninth Judicial Circuit, at San Francisco, California, thirty (30) days after the date of this Citation, to show cause, if any there be, why the Order and Decree appealed from should not be corrected and speedy justice done the parties in that behalf.

WITNESS, The Honorable Frank S. Dietrich, Judge of the District Court of the United States, for the District of Idaho, Southern Division, this 20th day of September, A. D. 1916.

FRANK S. DIETRICH,
United States District Judge
for the District of Idaho.

Service accepted this 20th day of Sept., 1916.

S. H. HAYS,
P. B. CARTER,

Attorneys for Plaintiff.

Filed Sept. 20, 1916. W. D. McReynolds, Clerk.

RETURN TO RECORD.

And thereupon it is ordered by the Court that the foregoing transcript of the record and proceedings in the cause aforesaid, together with all things thereunto relating, be transmitted to the United States Circuit Court of Appeals for the Ninth Circuit, and the same is transmitted accordingly.

W. D. McREYNOLDS,

(Seal)

Clerk.

By PEARL E. ZANGER,

Deputy.

(Title of Court and Cause.)

CLERK'S CERTIFICATE.

I, W. D. McReynolds, Clerk of the District Court of the United States for the District of Idaho, do hereby certify that the above and foregoing transcript of pages from one (1) to three hundred and nine (309), inclusive, contain true and correct copies of Bill of Complaint, including statement of the substance of Exhibit "A" and a copy of Exhibit "B" attached to said Bill of Complaint, Answer and Proposed Amendment to the Answer, Statement of Evidence of all witnesses, including a copy of plaintiffs' exhibits numbered 1, 5-c, 9 and 10, and a statement of the substance of plaintiffs' exhibits numbered 2, 3, 4, 5-a and 5-b; copy of defendant's exhibit numbered 2, the Decision of the trial court, the Decree made and entered in said cause, the Petition for Appeal and the Order allowing the same, the Assignment of Er-

rors, the Stipulation between counsel for the respective parties as to the transmission of original exhibits, the Praeceptum to the Clerk of said Court, the Order of the trial Court for the transmission of original exhibits, the Bond on Appeal, the Clerk's Return to Record and Clerk's Certificate, in the above entitled cause, which together constitute the transcript of record herein upon appeal to the United States Circuit Court of Appeals for the Ninth Judicial Circuit. I further certify that I have annexed to said transcript of the record the original Citation issued in said cause. I further certify that the costs of the record herein amount to the sum of three hundred and fifty-nine and 75-100 dollars (\$359.75), and that the same has been paid by appellant.

Witness my hand and the seal of said Court affixed at Boise, Idaho, this 23rd day of November, 1916.

W. D. McREYNOLDS,

(Seal)

Clerk.

By PEARL E. ZANGER,

Deputy Clerk.



